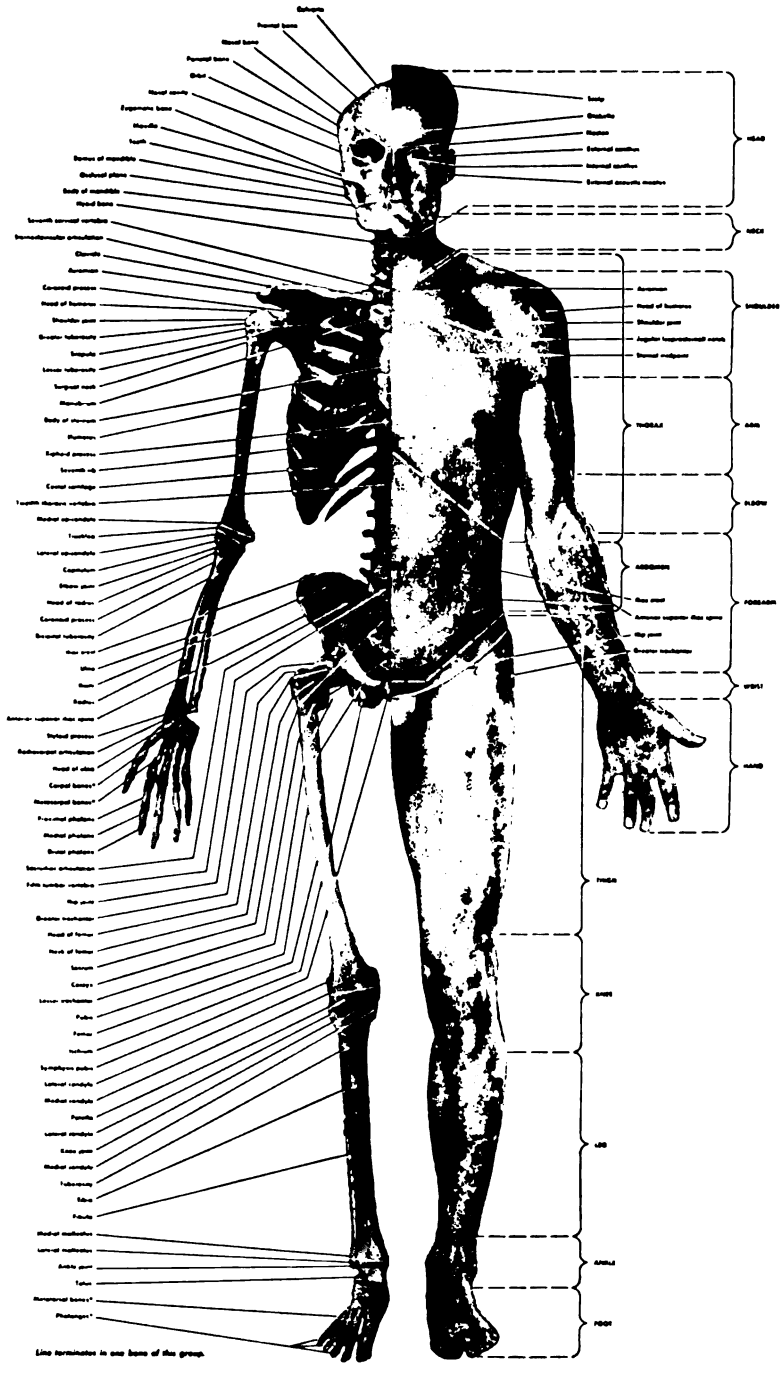
GLOSSARY OF WORDS AND PHRASES USED IN RADIOLOGY AND NUCLEAR MEDICINE

LEWIS E. ETTER, M.D.

GLOSSARY OF WORDS AND PHRASES USED IN RADIOLOGY AND NUCLEAR MEDICINE



HUMAN BODY. SKELETAL AND EXTERNAL ASPECTS

GLOSSARY OF WORDS AND PHRASES USED IN RADIOLOGY AND NUCLEAR MEDICINE

Prepared from various sources for
Medical Secretaries, X-ray Technicians, Medical Students
and Residents in Radiology

By

LEWIS E. ETTER, B.S., M.D., F.A.C.R.

Professor of Radiology and Chief, Radiological Service
Western Psychiatric Institute and Falk Clinic
School of Medicine, University of Pittsburgh
Consultant, Pittsburgh State Tuberculosis Hospital
Leech Farm, Pittsburgh, Pennsylvania

With a Section on

Suggested Terminology for Roentgenological Reports

Devised by

Doctors Fisher, Bovard, and Bacon

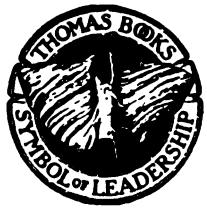
for the

Pennsylvania Radiological Society

Foreword by

Olive G. Johnson, A.B.

Medical Record Librarian-in-Chief
Health Center
University of Pittsburgh



CHARLES C THOMAS · PUBLISHER
Springfield · Illinois · U.S.A.

CHARLES C THOMAS • PUBLISHER
BANNERSTONE HOUSE
301-327 EAST LAWRENCE AVENUE, SPRINGFIELD, ILLINOIS, U.S.A.

Published simultaneously in the British Commonwealth of Nations by
BLACKWELL SCIENTIFIC PUBLICATIONS, LTD., OXFORD, ENGLAND

Published simultaneously in Canada by
THE RYERSON PRESS, TORONTO

Library of Congress Catalog Card Number: 59-14918

Printed in the United States of America

To
GRACE

Language is the armory of the human mind;
and at once contains the trophies of its past,
and the weapons of its future conquests.

SAMUEL TAYLOR COLERIDGE

FOREWORD

By

Olive G. Johnson, A.B.

Medical Record Librarian-in-Chief
Health Center
University of Pittsburgh

The many advances in Radiology in the past decade have resulted in the development of new descriptive terms as well as a new focus on words already in the scientific vocabulary. Knowledge of these terms, their meaning, and correct spelling is a requisite for every medical secretary. In addition to a general knowledge of medical terminology, every secretary should be thoroughly conversant with the technical vocabulary of the department in which she is employed. Accurate transcription of findings and treatment prescribed by the radiologist is essential for patient care, teaching and research.

This Glossary meets a great need. The author, cognizant of the lack of material for teaching in this area, is to be commended for the time and effort expended on this worthwhile enterprise which has been designed for both study and reference. It is comprehensive in scope, complete in detail, and yet concise and compact in format. The alphabetic arrangement of words and phrases permits quick reference. The inclusion of Suggested Terminology for Roentgenological Reports as well as Sample Reports augments its use in teaching the application and association of terms.

Faculty of schools for medical secretaries, residents in radiology, nurses, medical record librarians, medical students and x-ray technicians, as well as all personnel employed in the health field will find this volume an excellent text. Directors of Departments of Personnel and Medical Records in hospitals who are responsible for in-service training programs for medical secretaries will welcome this publication as a valuable teaching tool. It is indeed a significant contribution to the health field.

INTRODUCTION

Medical dictionaries contain practically all the words used in general medical dictation. Some of these books are rather large and unwieldy. It occurred to the author that a collection concentrated for a particular branch of medical terminology might be of value for a student of the subject, or for a medical secretary who needs to know the words and phrases commonly used in the specialty of Radiology and Nuclear Medicine. Not only may this glossary serve for reference, but it may also be reviewed frequently in order to become familiar with spelling and definitions of these words.

Medical secretaries may be a great help to doctors in many ways. Who else, to quote Mrs. Walter Ferguson, ". . . is there besides his wife to protect him against the slings and arrows of outrageous fortune?" Sheltered then, and buffered by his "girl Friday," a doctor may study his radiographs and formulate ideas which the report will tell exactly. No phrases will appear which have been known to creep into reports in less hallowed halls of learning, viz, "GI Track" for "Tract," "central" for "congenital" heart disease, "cereal" for "serial" examinations, "psychosemantic" for "psychosomatic" or the classic "no more thorax" for "pneumothorax." She will not be trapped by such homonyms as bazaar, bizarre, and bezoar. The secretary will not be fooled, that is, if the doctor is careful to enunciate and occasionally spell or explain some words or phrases which may be indistinguishable when heard on a dictating machine. Such a term as foramen ovale has been known to come out "foraminal valley."

In addition to being competent in the particulars above referred to, perhaps the most valued quality in a medical secretary is her ability to keep everything she knows strictly confidential. It is an inviolate rule and an important factor in her position that a secretary should never betray a confidence. What passes between a doctor and his patient is given in confidence and is expected to go no farther. Because of her position the secretary, of course, is privy to what transpires and is trusted with many kinds of secrets. A secretary must be on guard particularly with her close friends and neighbors and should resist at all times the temptation to be a gossip. She should be able to say a firm and definite "I don't know" to any prying or subtle questioning. The reputation of the doctor and feelings of the patient must come before the secretary's desire to be the bearer of what might be considered sensational information. Obviously, the release of such material can redound only to her discredit and perhaps result in the loss of her position and reputation.

It is hoped that this glossary will enable the secretary to fulfill another es-

sential requirement of the doctor, namely, that she be accurate and precise in preparing reports, no matter how trivial or monotonous some of them may seem, because they are of extreme significance to the patient whose treatment is often determined by what is recorded. From the standpoint of the Chief of a Radiology Department, a most important person in the entire group of personnel is the secretary who transcribes the reports, because these are what represent the X-ray Department in the eyes of others. If the reports are not clear, distinct, and informative, all the expensive technical equipment, excellent work of technicians and interpretive effort of the radiologist will be for nothing. The knowledge that their work is essential to the smooth working of any medical team, should be a source of the greatest satisfaction to all medical secretaries.

LEWIS E. ETTER, M.D.

PREFACE

This volume of words and phrases has been written primarily for medical secretaries, residents in Radiology, and x-ray technicians who frequently may be called upon to double as secretary. Such a technician can be of inestimable value to her employer, especially in small offices. Medical secretaries, too, may be equally helpful by learning some x-ray technical procedures, such as processing, sorting, and filing films.

For residents in Radiology, this material furnishes a quick review of the field by providing words and phrases which can frequently help to formulate ideas with regard to pathological processes observed or to be treated. Many cross references have been included, particularly when two or more terms have essentially the same meaning. The reader is never directed to look under a different heading when alternative references to the subject are equally reasonable, as the definition is repeated for each one.

In this work I have received generous help from Miss Judith Weilerstein, Chief Medical Record Librarian in the Falk Clinic, and her medical secretarial students. Miss Laurabelle Eakin, B.S., Research Librarian of the Health Professions Library, University of Pittsburgh, has rendered invaluable service in providing many references. My secretaries, Mrs. Joan S. Carter, Mrs. Catherine C. Carter, Mrs. Grace A. Lee, Mrs. Gertrude Lennon, Miss Dorothy J. Kisiel, and Mrs. Helen M. Stewart, R.T., Supervising and Chief X-ray Technician, have worked hard on the text and transcriptions. Dr. H. Curtis Long, Senior Teaching Fellow in Radiology, spent many hours correcting text and definitions as well as suggesting new words and phrases for inclusion. His excellent critical sense has been of inestimable value in deciding many questions. Thanks are due Mr. Michael DeMarco for able editorial assistance and to Dr. Elliott Lasser, Professor of Radiology and Chairman of the Department, School of Medicine, University of Pittsburgh, for valuable suggestions and proof reading. Drs. Fisher,* Bovard, and Bacon have contributed immensely by permitting inclusion of their section on Suggested Terminology for Roentgenological Reports.

To these associates my sincere thanks and gratitude. Without their suggestions and encouragement, the accomplishment of this work would have been most difficult if not impossible to complete.

LEWIS E. ETTER, M.D.

* Joseph W. Fisher, M.D., Pittsburgh, Deceased 1952.

CONTENTS

ILLUSTRATIONS

GLOSSARY OF WORDS AND PHRASES USED IN RADIOLOGY AND NUCLEAR MEDICINE

RADIOLOGICAL SYMBOLS AND SEMANTICS[1]

The language of Radiology has become confused in recent years. Its use by the general medical public and laymen as well has greatly increased. Thus, it has become quite common to hear expressions such as, "May I have my x ray," "I've come for my x ray," "He x-rayed me," "My x-ray picture showed . . . ." The mathematical sign used by Roentgen to indicate an unknown or mysterious kind of ray is now being employed both as a noun and as a verb. The word x ray is short and direct and connotes both a picture or shadow transparency, and the act of producing the same. No doubt the American tendency to shortcuts can be credited with substituting "x ray" for the more correct roentgenogram, or radiograph of the British, and "x-ray" technician for the British radiographer. Probably, too, mass radiographic surveys have contributed to the use of the term "x ray" as an easy vehicle with which to convey the idea that something may be discovered by such an examination of everyone's chest. In reporting the results of such examinations and faced with the necessity of writing headlines, one could hardly expect newswriters to use such correct terms as "Survey Roentgenograms" or "Roentgenographic Surveys." Therefore, "x ray" as both noun and verb is probably here to stay, and there is little one can do about it.

Just as the sign x ray has become commonly accepted for Roentgen, one would have imagined the term "film" might have likewise become popular, but it has never enjoyed the vogue of "plate" or more especially, "flat plate." These names date from World War I days when George Eastman substituted emulsion-coated film for the old glass plates. These plates were certainly flat, but perhaps this word was meant to indicate a single exposure of the chest, skull, or abdomen as distinguished from a stereoscopic pair or an exposure before contrast media were either swallowed or injected. Regardless of origin, it has persisted in today's medical parlance and may even become, if it has not already become, accepted by common usage. If so, this acceptance would be unfortunate, because one can utilize much more descriptive and meaningful phrases, i.e., posteroanterior and lateral radiographs of the chest and skull or plain, scout or survey radiographs of the abdomen. The urologist's names of "preliminary film" or KUB are good ones, because they specify a scout 14×17-inch film of the abdomen to reveal radiopaque shadows before injection of opaque medium for excretory urography. In this sense, as pointed out by Dr. Braasch[2] and others, the

[1] Etter, L. E.: *Bulletin of Allegheny County Medical Society, 46*:33, Oct. 1957.

[2] Dr. William F. Braasch, Prof. Emeritus, Urology, Mayo Clinic.

phrase IVP for "intravenous pyelography" is a misnomer and should be termed excretory urography or simply urogram since kidney, ureters and bladder may all be shown.

Many may wonder what is meant by a "Bucky film." The Bucky device was invented in 1909, and its description first published in 1913 by Dr. Gustav Bucky[1] of Berlin. It consists of a wafer-thin grid of alternate opaque and non-opaque strips or squares which eliminate stray and scattered radiation and allow only the parallel, penetrating rays to strike the film. Especially useful for thick parts as in GI tract and vertebral column examinations, it is also helpful in providing highly penetrated films of the chest to show details of the trachea and bronchi where there may be a deformity, as in bronchiogenic carcinoma. Equally important for the examination of heavy parts are intensifying screens fitted to the front and back covers of cassettes with film in between. These were devised in 1896 by Dr. Michael Pupin of Columbia University who used fluorescent screens invented by Thomas A. Edison.[2] They give off visible light when struck by x rays, and thus, greatly intensify or reinforce their effect on the film. In this way, exposure time and x-ray dosage are greatly reduced and definition in heavy parts is improved.

For small parts, such as extremities, "no-screen" film and techniques are used in which the film is placed in a lead-backed cardboard holder. These films show excellent detail and are devoid of excessive contrast which usually results when screens are used for these structures.

There is considerable doubt among doctors as to what exactly is meant by PA and AP radiographs of the chest and abdomen. When referring to the chest, confusion arises from the way one views chest films. Most doctors like to face a patient, as in stethoscopic examination, or looking at him in the fluoroscope. This is natural and correct. But in order to make the film of the chest, we face the patient *toward* the film cassette, with the x-ray tube at his *back*, and make a PA exposure which we then view as if it were AP. Similarly, right or left lateral views and right or left anterior oblique views (RAO, LAO) are made so that when the films are viewed as transparencies, the heart, great vessels, and lungs appear to us as they did in the fluoroscope or as we think of them on our physical examination. Also, PA radiographs of the chest result in less magnification of the heart and great vessels than ones made in the AP direction.

An exception to the above is that of an AP film made in bed. If the patient is unable to sit on the edge of the bed and hold the film in front of him, the exposure must be made with the film at his back and the tube in front of him at a rela-

[1] Bucky, Gustav: A grating diaphragm to cut off secondary rays from the object. *Arch. of Roentgen Ray, 18*:6–9, 1913.

[2] Fuchs, Arthur W.: Edison and Roentgenology: *Am. J. Roentgenol., LVII:* 2, Feb. 1947.

tively short distance, producing a somewhat distorted view. Such films of the chest or abdomen are also incorrectly spoken of as "portable." In reality, this term refers to a low-power x-ray apparatus designed for carrying to a home or bedside, but proven in practice to be of too low capacity for satisfactory use in any parts but the extremities. Actually, these bedside films are made by mobile units, used extensively in World War II for wheeling the apparatus from ward to ward, as well as before and since then, and should properly be spoken of as "bedside films."

Films of the abdomen are usually made with the patient on the x-ray table or at the bedside in the AP direction, that is, the tube in front and the film cassette behind the patient. When the patient is too ill to stand, these may also be made sitting (for gas under the diaphragm) or in right or left lateral decubitus position (also for abnormal gas as in rupture of a viscus or in intestinal obstruction). Frequently, PA and oblique radiographs are made of the abdomen for studies of the gallbladder, upper gastrointestinal tract and the large bowel, when it is desired to minimize distortion by having the parts to be examined as close as possible to the film.

Among doctors, there is now a generally correct understanding of the part that Radiology plays in the medical scheme of things. This concept embraces the medical use of all forms of x, gamma, alpha and beta radiations whether they emanate from an x-ray tube, a cobalt wafer, or radium, as in interstitial and teletherapy, or from such isotopes as of iodine, phosphorus, or gold. Strictly defined, the title radiologist denotes a physician who employs all the above types of radiation for therapy and diagnosis. A roentgenologist is one who employs only roentgen rays (x rays) in therapy and diagnosis. The tendency to subdivide the specialty has resulted in the appearance of the diagnostic roentgenologist and the therapeutic radiologist who are separate practitioners. The scope of radiology is so large and complicated that the division seems desirable. For some years now, the British (1943) have separated the two, and specialists in these fields receive a diploma in Medical Radiodiagnosis (D.M.R.D.) or a diploma in Medical Radiotherapy (D.M.R.T.).

It seems that some undesirable terms in radiologic etymology are here to stay and will become embedded in the medical language and be accepted through continuous usage. Many other words too often in everyday use, principally ill-considered use by the profession, are amenable to correction. Terms and phrases should be carefully chosen to convey the exact meaning of our thoughts in the tradition of best scientific and medical practice.

SUGGESTED TERMINOLOGY
FOR
ROENTGENOLOGICAL REPORTS

SUGGESTED TERMINOLOGY FOR ROENTGENOLOGICAL REPORTS

Prepared for the Educational Committee of the Pennsylvania Radiological Society by the Standard Report Forms Committee: Joseph W. Fisher, M.D.,[1] Paul G. Bovard, M.D.,[2] and Ralph D. Bacon, M.D.,[3] and presented here with some additions and revisions.

[1] Chairman of the Committee and formerly Associate Professor of Radiology (Deceased), University of Pittsburgh, and Associate of George W. Grier, M.D., Pittsburgh, Pennsylvania.

[2] Radiologist, Allegheny Valley Hospital, Tarentum, Pennsylvania.

[3] Radiologist, Hamot Hospital and St. Vincent's Hospital, Erie, Pennsylvania. Consultant, Veterans Administration Hospital, Erie, Pennsylvania.

SUGGESTED TERMINOLOGY FOR ROENTGENOLOGICAL REPORTS

FRACTURES

I. X-ray examination reveals that the fracture is
   - A. Single or multiple
   - B. Complete or incomplete
   - C. Fissured
   - D. Depressed
   - E. Perforated
   - F. Diastatic
   - G. Impacted
   - H. On right or left
     1. Bone involved

II. The fracture line is
   - A. Irregular
   - B. Transverse
   - C. Longitudinal
   - D. Oblique
   - E. Spinal
   - F. T Shaped
   - G. Stellate
   - H. Extends ____ cm. from a bony landmark
     1. Caudad (downward)
     2. Outward (lateral)
     3. Cephalad (upward) to about ____ cm. from a bony landmark

III. The fragments are
   - A. In good alignment
   - B. Overlapping, ____ cm.
   - C. Angulated, ____ degrees
   - D. In apposition or not in apposition

IV. The proximal (upper) fragment is displaced
   - A. Cephalad (upward)
   - B. Caudad (downward)
   - C. Mesially (inward)
   - D. Laterally (outward)

V. The distal (lower) fragment is displaced
   - A. Cephalad
   - B. Caudad
   - C. Mesially
   - D. Laterally
   - E. Anteriorly
   - F. Posteriorly

VI. Patella
   - A. Lateral
   - B. Medial
   - C. Vertical

VII. Knee
   - A. Anterior
   - B. Posterior
   - C. Medial
   - D. Lateral
   - E. Involving
     1. Tibia
     2. Fibula
     3. Both bones of leg

VIII. Ankle
   - A. Posterior
   - B. Anterior
   - C. Medial
   - D. Lateral
   - E. Cephalad

DISLOCATIONS

Roentgen examination of the right (left) _____ joint shows a dislocation. There is (is not) an associated fracture.

I. Sternoclavicular. The clavicle is displaced
   - A. Forward
   - B. Upward
   - C. Backward

II. Acromioclavicular. The clavicle is displaced
   - A. Upward
   - B. Downward

III. Shoulder. The humerus is displaced
   - A. Anteriorly
     1. Subcoracoid
     2. Subclavicular
   - B. Posteriorly
     1. Subacromial
     2. Subspinous
   - C. Cephalad
     1. Supracoracoid
   - D. Caudad
     1. Subglenoid

IV. Elbow
   - A. Posterior
   - B. Anterior
   - C. Lateral
   - D. Mesial
   - E. Divergent
   - F. Involving the
     1. Radius
     2. Ulna
     3. Both bones

V. Wrist
   - A. Anterior
   - B. Posterior

VI. Hip
- A. Anterior
  - 1. Obturator
  - 2. Pubic
  - 3. Perineal
  - 4. Central
- B. Posterior
  - 1. Dorsal
  - 2. Ischiatic

VERTEBRAL COLUMN

I. Portion examined:
- A. Cervical Vertebrae
- B. Thoracic Vertebrae
- C. Lumbar Vertebrae
- D. Sacral Vertebrae
- E. Coccygeal Vertebrae

II. Evidence of Abnormality
- A. Single or multiple
- B. Fractures
  - 1. Single or multiple
  - 2. Location
    - a. Centrum
      - 1. Type
        - a. Fissure
          - 1. Direction
        - b. Compression
          - 1. Deformity
          - 2. Kyphus
        - c. Comminution
          - 1. Location
          - 2. Displacement
      - 2. Relation of posterior edge to Spinal Canal Arch
      - 3. Location
      - 4. Type
        - a. Complete
        - b. Incomplete
        - c. Comminuted
        - d. Fissured
      - 5. Apposition
      - 6. Alignment
- C. Intervertebral disc injury
  - 1. Location
  - 2. Deformity
    - a. Narrowing
    - b. Wedging
    - c. Contour deformity
    - d. Nucleus pulposus protrusion
- D. Dislocation
  - 1. Location
  - 2. Displacement
  - 3. Alignment
- E. Repair
  - 1. Callus
  - 2. Deformity with associated change
  - 3. Estimated age of injury
- F. Disease
  - 1. Single or multiple
  - 2. Location
  - 3. Structural change
    - a. Bone production
    - b. Bone loss
      - 1. Diffuse
      - 2. Localized
  - 4. Displacement
  - 5. Alignment
  - 6. Associated with soft tissue changes
  - 7. Diagnosis
- G. Anomaly
  - 1. Single or multiple
  - 2. Location
  - 3. Type
  - 4. Deformity
- H. Changes due to age, posture, etc.

III. Evidence of changes elsewhere
- A. Related
  - 1. Renal calculi with parathyroid vertebral atrophy
  - 2. Pulmonary tuberculosis with vertebral tuberculosis
  - 3. Fracture of pelvis with fracture of sacrum
  - 4. Etc.

IV. Prognosis as to
- A. Mortality
- B. Morbidity
- C. Function
  - 1. Immediate
  - 2. Delayed

SKULL

I. Fracture
- A. Linear
- B. Comminuted
- C. Depressed
  - 1. Degree
- D. Compound
  - 1. May be diagnosed if opaque foreign material is present
- E. Side
- F. Part
  - 1. Important channels crossed
  - 2. Paranasal sinuses or mastoids involved
- G. Recent
- H. Old

II. Size and shape. The greatest length of the skull extends from the remote point of the occiput to the glabella, usually about 180 mm.; the greatest breadth is between the opposite sides of the temporal regions, usually about 146 mm.; the greatest height is the distance from the anterior edge of

the foramen magnum (basion) to the highest point of the vertex, usually about 135 mm. The cephalic index is the quotient of the maximum breadth multiplied by 100 divided by the maximum length

A. Normal
   1. Mesocephalic. Cephalic index 70 to 80
   2. Dolichocephalic. Cephalic index under 70. The long narrow head usually seen in the Anglo-Saxon race
   3. Brachycephalic. Cephalic index over 80. The broad, almost circular skull of the Slavic and some of the Semitic races

B. Abnormal
   1. Megalocephalic. Excessive growth of the skull and contents occasionally seen without any appreciable cause
   2. Microcephalic. Small calvarium with an AP diameter of 14 cm. Disproportionately large facial bones
   3. Hydrocephalus. Increase in size, general thinning of bones, separation of sutures, deepening of convolutional impressions and atrophy of the sella
   4. Oxycephalic. (Turricephaly, steeple head, tower head, craniostenosis.) The cavity becomes unusually deep; increase in the convolutional markings and the base of the skull becomes scaphoid. Anterior fontanelle may remain open
   5. Hemiatrophy. One side smaller than normal. Often convolutional markings absent on affected side in young individuals and sinuses and mastoid on affected side may be enlarged
   6. Rachitic head. Usually enlarged and cuboidal in shape
   7. Hypertelorism. Increase in width of inter-orbital space. Normal is 2.5 cm.
   8. Mongolian idiocy. Brachycephalic with small circumference and persistent fontanelles and frontal suture as late as the 8th year
   9. Dysostosis cleidocranialis. Partial or complete failure of ossification of cranial bones and delayed ossification of clavicle

III. Thickness

A. Normal. Varies between 3 and 10 mm., and as a rule is thickest in the occipital region. The inner table measures 1 to 1.5 mm. and is relatively dense. The outer table measures 2+ mm. and is less compact. The diploic layer represents the greatest variation

B. Abnormal
   1. Inner plate
   2. Outer plate
   3. Diploë
   4. Localized
   5. Generalized

C. Increased thickness
   1. Hyperostosis frontalis. Thickening and irregularity of the inner table of the vertical portion of the frontal bone. There may be generalized increase in thickness of all bones of the vault.
   2. Paget's Disease (late stage) Osteoporosis Circumscripta (early stage)
   3. See Section VI.

IV. Intracranial calcification

A. Normal
   1. Pineal body
      a. Localization (See Vastine and Kinney)
   2. Choroid Plexus. Normal position 2.5 cm. lateral to midline and slightly above and posterior to the pineal body
   3. Falx cerebri
   4. Petro-clinoid ligaments

B. Abnormal (see Section VI)
   1. Character
      a. Punctate
      b. Finger-like
      c. Amorphous
      d. Convoluted parallel streaks
   2. Location

V. Sella turcica

A. Normal
   1. Circular
   2. Oval
   3. Flat or saucer-shaped
   4. Bridged

B. Abnormal
   1. Intrasellar deformity
      a. Marked enlargement and ballooned-out appearance
      b. Encroachment on sphenoid sinus
      c. Pointed tuberculum sellae
   2. Suprasellar deformity
      a. Enlargement chiefly in A-P diameter
      b. Widening of entrance to pituitary fossa

c. Absence of posterior clinoid processes
d. Variable degree of erosion on top of dorsum sellae

3. Parasellar deformity
   a. "Type normal" or slightly enlarged
   b. Often a definite unilateral erosion of dorsum, with the appearance of a double floor to the fossa and involvement of but one anterior clinoid process
4. Metasellar deformity
   a. Atrophy, erosion and eventual disappearance of the posterior clinoids
   b. Enlargement of the fossa chiefly in the anteroposterior diameter

VI. Signs of Neoplastic and Inflammatory Diseases

A. Generalized or indirect signs

1. Abnormal sella turcica
   a. Type
2. Displacement of pineal body (Vastine and Kinney)
3. Bone Absorption
   a. Where located
   b. Localized
   c. Diffuse
   d. Destructive metastatic tumor—may be single or multiple and one or both tables may be involved
   e. Multiple Myeloma
   f. Meningioma. Inner plate. See below
   g. Osteogenic sarcoma. May involve one or both plates. See below
   h. Acoustic neuroma. Usually erodes the internal auditory meatus
   i. Cholesteatoma. Widening diploic space and marked thinning to complete erosion of the inner and outer plates, occasionally with expansion, and usually located in squamous or mastoid portion of temporal bone
   j. Osteitis fibrosa cystica. Cystic areas of diploë with inner and outer plates maintained
   k. Hemangioma. Honeycombed circular area of decreased density. See below
   l. Chordoma. Produces destruction of basisphenoid and adjacent portion of occipital bone
   m. Aneurysm of vessels of Circle of Willis may produce erosion of one side of sella turcica including one or both of the homolateral clinoids, enlargement of the homolateral optic foramen and enlargement of the sella turcica. See below
   n. Acute Osteomyelitis. Irregular areas of decreased density may involve one or both plates.
   o. Syphilitic osteomyelitis. Areas of decreased density of irregular size and shape usually in the outer plate
   p. Xanthomatosis. Generally multiple areas of destruction in membranous bones varying in size, but regular in outline
4. Bone proliferation
   a. Location
   b. Productive metastatic tumors usually from the prostate
   c. Meningioma. Involves inner plate early and entire thickness of skull late
   d. Osteogenic sarcoma. Involves both plates more often. Perpendicular striations usually confined to outer plate
   e. Osteoma. Involves one or both plates
   f. Osteochondroma usually occurs in base at junction of cribriform and orbital plates
5. Calcium deposits in diseased areas of brain
   a. Glioma
   b. Craniopharyngioma. (Rathke's pouch cyst, suprasellar cyst)
   c. Ependymoma
   d. Psammoma
   e. Brain abscess (old)
   f. Tuberculosis
   g. Gumma
   h. Aneurysm
   i. Venous, arterial and arteriovenous tumors. (Convoluted parallel streaks)
   j. Atheromatous plaques in diseased arteries, especially internal carotids
   k. Hematoma
6. Localized increase in vascularity of skull
   Meningioma
   b. Arterial or arteriovenous tumors.

Usually present large vascular grooves on the inner and outer tables
c. Cavernous Hemangioma

CEREBRAL ANGIOGRAPHY

I. Site of percutaneous or direct injection
A. Common carotid, R or L
B. Internal carotid, R or L
1. Bilateral or unilateral
C. Vertebral artery, R or L
D. Lateral, AP, axial, or fronto-occipital projections
II. Contrast material
A. Type used
B. Amount injected
C. Visualization satisfactory or unsatisfactory
III. Sequence of films
A. Time interval e.g., 1 per sec., etc.
IV. Course of opaque material
A. Normal (Carotid angiogram)
1. Arterial phase with complete or incomplete filling of carotid syphon and branches
a. Sylvian group
b. Middle cerebral artery
c. Anterior cerebral artery
2. Capillary phase
3. Venous phase with filling of dural-venous sinuses and other veins, all draining into transverse sinus
B. Abnormal (Carotid angiogram)
1. Block in internal carotid artery indicative of thrombosis
2. Displacement of carotid syphon as from intracranial mass lesion
3. Aneurysm of carotid artery or branches
4. Tumor stain and location on AP and lateral projections
5. Displacement or alteration of course of any of the intracranial arteries or veins
C. Normal (Vertebral angiogram)
1. Arterial phase with complete or incomplete filling of the R or L vertebral artery, the basilar artery and branches
a. Posterior inferior cerebellar artery
b. Superior cerebellar artery
c. Posterior cerebral artery
d. Posterior communicating artery
2. Venous phase with filling of subtentorial veins, superior cerebellar veins, great vein of Galen and inferior veins draining into transverse or petrosal sinuses
D. Abnormal (Vertebral angiogram)
1. Block in vertebral artery or basilar artery
2. Aneurysms
3. Tumor stains
4. Displacement of arteries or veins

VENTRICULOGRAPHY AND PNEUMOENCEPHALOGRAPHY

I. Size of ventricles
A. Normal
1. Amount of air injected and fluid withdrawn
B. Symmetrical or asymmetrical
C. Abnormal
1. One or both
2. Filled evenly or unevenly
3. Dilated
4. No filling
D. Point at which air is obstructed
II. Shape of ventricles
A. Normal
B. Abnormal
1. One or both
2. Loss of more or less sharp angulation of lateral ventricle indicating a dilatation
3. Pressure or depression, traction or intraventricular mass deformities
4. Elongation
5. Blunting
III. Position of ventricles
A. Normal
B. Abnormal
1. Lateral displacement
2. Cephalad displacement
3. Caudad displacement
4. Anterior displacement
5. Posterior displacement
6. Riding under falx
C. Visualization of IV ventricle, aqueduct, III ventricle, and foramen of Monro
1. Evidence of block
2. External pressure or intrinsic mass in III or IV ventricles
3. Displacement of aqueduct
IV. Subarachnoid pathways
A. Normal
1. Filled over convex and medial surfaces of brain
B. Abnormal
1. No filling, attributed to technique or pathological changes

2. Filled on one side only
3. Generalized or spotty dilatation

V. Basal cisterns
- A. Normal, cisternae pontis, interpeduncularis, chiasmatis, magna cerebri, corpus callosum and ambiens
- B. Abnormal
  1. Displacements
  2. Enlargement
  3. No filling

MYELOGRAPHY

I. Withdrawal of spinal fluid and
- A. Subarachnoid injection of ____ cc. of Pantopaque
- B. Clearly identified in subarachnoid space or trapped subdurally

II. Movement of opaque medium with tilting table
- A. Normal
  1. Unimpeded flow in subarachnoid space
  2. With patient prone and in—
     a. R. and L. obliques
     b. Lateral positions
- B. Abnormal
  1. Failure to flow because of subdural injection
  2. No filling of nerve sheaths, with lack of visualization
  3. Pressure deformity from protruded disc seen best in ____ position
  4. Block at C ____, T ____, or L ____ level
     a. Defect is smooth, irregular, conical, rounded, concave, semicircular, ovoid
     b. It is extra or subdural
     c. Intramedullary or extramedullary
     d. Discrete intrathecal lesion

MASTOID PROCESSES AND TEMPORAL BONES

I. Type
- A. Sclerotic
- B. Pneumatic
- C. Mixed
- D. Diploetic

II. Symmetrical or asymmetrical

III. Distribution of cells other than in the mastoid process
- A. Zygomatic area
- B. Temporal area
- C. Occipital area
- D. Sino-dural (Citelli's) angle

IV. Position of sigmoid sinus
- A. Anterior
- B. Inferior
- C. Posterior

V. Pathological changes
- A. Simple acute mastoiditis
- B. Subacute mastoiditis
- C. Chronic mastoiditis
- D. Peri-sinus abscess
- E. Epidural abscess
- F. Cholesteatoma
- G. Erosion of the porus acousticus

ACCESSORY NASAL SINUSES

I. The right (left)
- A. Frontal
- B. Ethmoid
- C. Maxillary
- D. Sphenoid is
  1. Undeveloped
  2. Small
  3. Normal
  4. Large
  5. Aberrant

II. This sinus is
- A. Clear
- B. Slightly opaque
- C. Densely opaque

III. The opacity is
- A. Diffuse
- B. Circumscribed

IV. The cell wall is
- A. Intact
- B. Thickened
- C. Eroded

V. The cell partitions are
- A. Thickened and fuzzy in appearance
- B. Obliterated
- C. Sharply outlined, thin and increased in density
- D. Eroded

VI. Granger's line is
- A. Visible
- B. Invisible on
  1. Both sides
  2. The right (left) side

VII. The sella turcica is
- A. Normal
- B. Abnormal
- C. The floor of the sella is
  1. Intact
  2. Eroded

VIII. The lateral view shows
- A. The depth of the frontal is ____ cm.
- B. The depth of the sphenoid from the collumella is ____ cm.

C. The floor of the maxillary sinus extends from the ____ bicuspid to the molar
D. The floor of the maxillary sinus is ____ cm. above (below) the floor of the nose

IX. The Roentgen findings are indicative of a
A. Mild
B. Moderate
C. Moderately severe
D. Severe sinusitis of the
1. Acute catarrhal type
2. Chronic catarrhal type
3. Acute suppurative type
4. Chronic suppurative type
5. Hyperplastic type
6. Atrophic type

X. There is a
A. Polyp
B. Mucocele
C. Cyst
D. Osteoma
E. Malignant tumor
F. Meningocele in the right (left)
1. Frontal
2. Ethmoid
3. Maxillary
4. Sphenoid sinus

MANDIBLE

I. Evidence of any abnormality
II. There is (is not) evidence of fracture
A. Single
B. Multiple
C. Comminuted
III. Located on the right (left) in the region of
A. Coronoid process
B. Condyle
C. Sigmoid notch
D. Ramus
E. Angle
F. Body
G. Between ____ teeth
H. Symphysis
IV. The fragments are
A. In apposition
B. Overlapping
C. In good alignment
V. Presence of fractured tooth roots
VI. Evidence of bone disease
A. Single or multiple
B. Nature of lesion
C. Locations
D. Shows the following structural changes
1. Bone production
2. Bone destruction
a. Diffuse or localized
3. Invasion of soft tissues
4. Displacement
5. Diagnosis
VII. Temporo-mandibular joint
A. Bone disease
B. Dislocation
C. Fracture

TEETH*

I. Crown
A. Caries
B. Pulp stones
C. Secondary dentine
D. Calcification of the pulp
II. Apical
A. Periodontitis (inflammation of peridental membrane)
B. Rarefying osteitis
1. Circumscribed
2. Diffuse
C. Cysts
1. Radicular
2. Dentigerous
3. Residual
4. Globulomaxillary
5. Incisive canal
D. Condensing osteitis
E. Exostosis
F. Enostosis
G. Tumors
1. Osteoma
2. Cementoma
3. Odontoma
III. Alveolar process or bone
A. Marginal periodontitis
B. Alveolar resorption
1. Horizontal
2. Vertical
C. Resorption of lamina dura
IV. Root canal
(devitalized teeth)
A. Filling
1. Complete
2. Incomplete
3. Overfilling
4. Perforation
V. Teeth
A. Missing
1. Congenital
2. Extracted

* Courtesy of J. C. Eselman, D.D.S., Professor of Oral Roentgenology, School of Dentistry, University of Pittsburgh.

B. Unerupted
C. Impacted
D. Supernumerary
E. Malposed
F. Hypercementosis
G. Residual root

CHEST

I. Presence of disease
   A. Is actual disease present
II. Location and distribution of pathological lesion
   A. Is it in the
      1. Upper
      2. Middle
      3. Lower portion of the lung, or is there
         a. Generalized involvement
   B. Is it most pronounced in
      1. Hilar region (central or peripheral)
   C. Is it unilateral or bilateral
   D. Is its origin peribronchial or parenchymatous
III. Character of pathological lesion
   A. Increase in peribronchial markings
      1. Soft and tortuous, as in recent lesions
      2. Discrete and drawn out into straight lines as in more chronic lesions
   B. Involvement of parenchyma
      1. Is there increase in lung density
         a. Uniform or mottled
         b. Isolated infiltrations
         c. Does lesion have
            1. Soft appearance
            2. Discrete appearance of fibrosis
            3. Dense appearance of calcification
      2. Is there a decrease in the lung density
         a. Does the rarefied shadow show
            1. Uniform appearance throughout, with no lung markings as in pneumothorax
            2. Lung markings showing through the radiolucent area of localized pneumothorax
            3. Is there evidence of actual lung destruction as cavity formation
               a. Evidence of surrounding inflammation
IV. Form and outline of the pathological condition
   A. Is the border of the lesion
      1. Abrupt and sharply defined
      2. Feathering out into normal lung tissue
   B. Does the lesion conform to the involvement of
      1. Any definite lobe of the lung
      2. Is it more or less rounded without reference to lobe involvement
V. Relationship of involvement to surrounding structures
   A. Is there narrowing of the chest cavity on the affected side
   B. Is there mediastinal retraction or other evidence of scar tissue formation
   C. Is there enlargement of the chest cavity on the affected side
   D. Is there mediastinal displacement to the opposite side
VI. Diagnosis
VII. Soft tissues
   A. Breasts
      1. Size
      2. Symmetry
      3. Deformity
      4. Absence
   B. Other soft tissues
VIII. Bony framework
   A. Negative
   B. Demineralized
   C. Evidence of trauma
   D. Evidence of neoplastic disease
      1. Benign
      2. Malignant
         a. Primary
         b. Metastatic
   E. Evidence of inflammatory lesion
      1. Pyogenic
      2. Luetic
      3. Tuberculous
   F. Anomalies of development
   G. Deformities due to
      1. Postural fault
      2. Trauma
      3. Disease
   H. Deficiency diseases
      1. Rickets
      2. Scurvy
   I. Erosion of bone
      1. Vascular
      2. Infections
      3. Neoplastic
         a. Benign
         b. Malignant
IX. Cardiac and supracardiac shadows
   A. Size

1. Average, or degree above or below

B. Contour
1. Normal
a. Asthenic
b. Sthenic
c. Hypersthenic
2. Abnormal
a. Type
b. Clinical significance
3. Abnormal change with change in position
a. Recumbent
b. Erect
c. Sagittal
d. Lateral
e. Left anterior oblique and right anterior oblique
4. Changes in respiratory phase

C. Position in chest
1. Normal
2. Displaced
a. Direction
b. Degree

D. Fluoroscopy
1. Amplitude of cardiac pulsations
2. Abnormal change with change in
a. Position
b. Respiration
3. Cardiac rate
4. Rhythm
5. Calcification in valves

E. Supracardiac vascular shadows
1. Diameter
2. Course
3. Abnormalities in contour
4. Aneurysm
5. Calcifications

F. Type of cardiovascular lesion
1. Congenital
2. Acquired

G. Cardiac measurements

X. Trachea
A. Calcifications
B. Width
1. Normal
2. Constricted
3. Pressure defect
C. Displacement
D. Main Bronchi
1. Angle at bifurcation
a. Normal
b. Decreased
c. Increased
2. Distortions
E. Foreign bodies

XI. Diaphragm
A. Contour
1. Normal
2. Irregular
a. Type
b. Cause
B. Height. Cause of any deviation from normal
1. Right or left side
C. Mobility on respiration
1. Normal
2. Decreased
a. Lag
b. Shallow excursion
c. Fixation
1. Partial or complete
3. Increased mobility
a. Significance
4. Paralysis
a. Paradoxical movement
b. Eventration
D. Congenital absence
E. Hernia of diaphragm
F. Neoplasm

XII. Pleura and pleural cavity
A. Fluid, presence of
1. Free
2. Loculated
B. Thickened pleura
1. Site
2. Degree
C. Evidence of adhesions
D. Calcifications
E. Pneumothorax

XIII. Mediastinum
A. Emphysema
B. Width in sagittal view
1. Normal
2. Decreased
3. Increased
a. Localized
b. Generalized
c. Significance
C. Adhesions
D. Thymus
1. Enlarged
a. Degree
b. Localized or general
c. Causing tracheal compression or either inspiration or expiration
E. Evidence of substernal thyroid

ANGIOCARDIOGRAPHY[1,2]

I. Plain films of chest, (PA and left or right lateral) accomplished prior to angiocardiogram
   A. Description of findings relative to:
      1. Cardiovascular structures
      2. Lung fields
      3. Mediastinum
      4. Osseous structures
      5. Tracheobronchial tree
      Identify number 4 and 5, in order to avoid confusion in angiocardiogram with abnormal findings
II. Contrast material
   A. Type used
   B. Amount injected and time required (if known)
   C. Site of injection
   D. Bolus, satisfactory or unsatisfactory
III. Sequence of films
   A. Time interval
   B. Reports should follow same sequence in which films are exposed.
IV. Blood flow
   A. Course
      1. Normal
         a. Normal course is, (if arm vessel is used) subclavian and innominate veins, superior vena cava, right atrium, right ventricle, pulmonary artery and branches, intrapulmonary arterial and venous pathways, pulmonary veins, left atrium, left ventricle, thoracic aorta and branches
      2. Abnormal
         a. The point of deviation from normal
         b. Change in concentration of contrast material (increased or decreased) in great vessels and pulmonary vasculature
         c. Change in direction (shunt) and course
         d. Collateral or new pathways e.g., unusual dilatation of azygos system of veins
         e. Relative size of existing vascular structures
V. Diagnosis
   A. Congenital cardiac malformation or disease
      1. Stenosis of a valve or vessel
      2. Cardiac and great vessel shunts
      3. Complex malformations e.g., tetralogy of Fallot
      4. Great vessel anomalies
   B. Acquired cardiac malformation or disease
VI. Practical points
   A. A row of view boxes so that several sequential films can be compared simultaneously
   B. A light condenser to bring out poorly defined shadows
   C. A reducing lens may better delineate some structures

ESOPHAGUS

I. Displacement due to
   A. Aneurysm
   B. Inflammation
      1. Pleural
      2. Pulmonary
      3. Mediastinal
   C. Mediastinal tumor
   D. Substernal thyroid
   E. Vertebral disease or deformity
   F. Cardiac enlargement
   G. Intrinsic lesions, such as diverticulum
II. Contour
   A. Due to extrinsic or intrinsic lesions
III. Obstruction
   A. Local
   B. Due to extrinsic or intrinsic lesions
IV. Dilatation due to
   A. Cardiospasm
   B. Obstruction
   C. Benign or malignant lesion
V. Presence of
   A. Cardiospasm
   B. Carcinoma
   C. Diverticulum
   D. Cicatricial stricture
   E. Foreign bodies
   F. Ulcer
   G. Varices
   H. Hiatus hernia
      1. Type

[1] Robb, George P.: *An Atlas of Angiocardiography*, 1951.

[2] Steinberg, Israel: Angiocardiography in Diagnosis of Congenital Heart Disease in Infancy and Childhood, JAMA, *170: 7*, June 59.

EDITOR'S NOTE—Above section by courtesy of Dr. H. C. Long, Instructor in Radiology, School of Medicine, University of Pittsburgh.

STOMACH

I. Size, shape, position, contour
II. Bodily habitus
  A. Hypersthenic, sthenic, hyposthenic and asthenic
III. Tone
  A. Orthotonic, hypertonic, hypotonic and atonic
IV. Flexibility and pliability of gastric wall
V. Type of peristalsis
VI. Spasm
  A. Cardiospasm
  B. Gastrospasm
  C. Pylorospasm
VII. Motility
  A. Emptying time
VIII. Changes in contour
  A. Niche
  B. Filling defect
  C. Hour glass contraction
  D. Linitis plastica
IX. Presence of
  A. Carcinoma (type, location, operability)
  B. Leather-bottle stomach
  C. Syphilis
  D. Tuberculosis
  E. Benign tumor
  F. Ulcer
  G. Bezoar (trichobezoar)
  H. Diverticula
  I. Diaphragmatic hernia

DUODENUM

I. Evidence of obstruction due to
  A. Stenosing ulcer
  B. Adhesion bands or pericholecystitis
II. Local constriction and pyloric stenosis
III. Benign muscular hypertrophy of pylorus
IV. Ulcer
  A. Deformity of contour
  B. General distortion
  C. Deformity of basal border
  D. Presence of niche
  E. Pseudo diverticula
  F. Pylorospasm
  G. Gastric motility (emptying time)
V. Diverticula
VI. Carcinoma
VII. Prolapsing polyps from stomach

SMALL INTESTINES

Study of roentgenograms made one-half, one, two, three hours, etc., after the ingestion of a barium water mixture shows the head of the mixture to be at ____; the tail of the mixture is at ____.

I. There is evidence, or there is no evidence of
  A. Gallbladder adhesions
  B. Post-operative adhesions
  C. Epsilon sign of Frostberg
  D. Disturbed motility pattern manifested by accelerated transit time of barium mixture
    1. Malabsorption syndrome suggesting
      a. Sprue
      b. Lymphosarcoma
      c. Whipple's Disease
  E. Segmentation or fragmentation (snowflakes) of small bowel pattern
  F. Uneven caliber of the lumen, with dilatations and contractions
  G. Thickening with "cobblestone" pattern of mucosa
  H. Separation of bowel loops by edema
  I. Large sausage-like collection of barium with no folds or moulage appearance
  J. "String" sign, especially in the terminal ileum
  K. Veils or membranes in right hypochondrium
  L. Lane kinks or adhesions in the terminal ileum or jejunum
  M. Incompetence of the ileocecal valve
  N. Diverticula
  O. Small intestine displacements
    1. Congenital
    2. Acquired
  P. Small intestine obstruction (with or without barium)
    1. Acute or chronic
    2. Ileus
      a. Adynamic or paralytic, usually reflex
      b. Dynamic from mechanical obstruction
        1. Strangulation obstruction marked by "coffee bean" sign, pseudotumor of Frimann-Dahl and fixed loop in both supine and erect films
  Q. Obstruction by the root of the mesentery or superior mesenteric artery
  R. Tuberculosis
  S. Intussusception
  T. Malignancy
    1. Carcinoma
    2. Sarcoma

LARGE BOWEL

I. A radiographic examination of the colon consists of

A. 24-hour gastrointestinal roentgenograms
B. Fluoroscopic examination during administration of a barium enema
C. Serial roentgenograms of filled colon, and after evacuation
D. Double contrast roentgenograms

II. The colon does, or does not show any abnormalities in position, length, fixation, and the outline is normal or abnormal from the cecum to the anal canal

III. The cecum and ascending colon show (or does not show) evidence of a filling defect indicative of
A. Ileocecal regurgitation
B. Fecal impaction
C. Adhesions
D. Appendiceal abscess
E. Malignancy
F. Tuberculosis

IV. The hepatic and splenic flexures are
A. Normal in contour and position
B. Displaced
C. Filling defect
1. Benign or malignant
D. Spasm
E. Concealed by overlapping colon
F. Loops distinctly shown and separable
1. Adhesions

V. Transverse colon
A. Normal
B. Long, short
C. Displaced
D. Filling defect
1. Benign or malignant
E. Diverticuli
F. Haustrations
1. Normal
2. Increased
3. Decreased
G. Adhesions
H. Obstruction
1. Partial
2. Complete

VI. Descending colon
A. Lumen
1. Normal
2. Increased
3. Decreased
B. Obstruction
1. Adhesions
2. Malignancy
C. Ulceration
1. Colitis
2. Tuberculosis

VII. Sigmoid
A. Spasticity
B. Adhesions
C. Diverticula
D. Malignancy
E. Polypi

VIII. Rectum
A. Outline
1. Normal
2. Abnormal
B. Filling defect
1. Benign or malignant

GALLBLADDER (CHOLECYSTOGRAM)

I. The preliminary film revealed
A. Gallbladder shadow
1. Milk of calcium bile
B. No gallbladder shadow
C. Calculi (Radiopaque)
D. Abdominal mass
E. Evidence of disease of the vertebrae

II. Examination after ingestion of dye (Telepaque, Orabilex) reveals
A. Gallbladder visualizes
B. Fails to visualize

III. The shadow is distinct
A. Is indistinct

IV. The gallbladder is normal (abnormal) in size and contour

V. There is a filling defect due to
A. Calculi (Radiolucent)
B. Phrygian cap
C. Pseudo-diverticula
D. Papilloma
E. Adenoma
F. Malignancy

VI. Examination after ingestion of fat meal reveals
A. Gallbladder reduces (increases) in size
B. The filling defect seen prior to the fat meal is absent (persistent)

VII. Results of examination indicate that this gallbladder is (is not) functioning in a normal manner

URINARY TRACT (PLAIN FILM EXAMINATION)

I. The right (left) kidney is
A. Outlined, obscured, not seen, absent
B. It is normal in size
1. Small, slight moderate, extreme
2. Large, slight moderate, extreme
C. The outline is normal (irregular, spherical, lobulated)
D. The outline suggests
1. Tumor
2. Horseshoe kidney
3. Solitary kidney
4. Polycystic kidney

E. It occupies a normal (low, ectopic) position
F. There are (are not) single (multiple, small, large branching) calculi in the upper (middle, lower) pole of the kidney, or in the upper (middle, lower) portion of the ureter

II. The bladder is visible (distended, not seen)
III. There are calcifications (calculi, foreign bodies, phleboliths) seen in the pelvis bladder, urethra, prostate)
IV. The psoas muscle is outlined (obscured)
V. Other extra-renal shadows should be reported, such as biliary calculi, pregnancy, disease of the spine, etc.

UROGRAPHY—EXCRETORY OR RETROGRADE

I. Excretory (retrograde) films made at ____ min., ____ min., etc.
A. Medium used and amount
II. The cephalic (middle, caudal) calyx of the right (left) kidney is normal
III. The minor calyces are
A. Dilated
B. Irregular
C. Incompletely filled
D. Deformed
E. Clubbed
F. Fringed
G. Absent
H. Obstructed
(These conditions also apply to the major calyces.)
IV. The kidney pelvis is
A. Spherical
B. Square
C. Long
D. Tubular
E. Duplex
F. Bifurcated
G. Distorted
H. Extra renal
I. Spider-like
J. Irregular
K. Anomalous
L. Fragmented
M. Deformed
V. The capacity of the pelvis is normal, small, large
VI. The filling defect is
A. Small, large
B. Definite, indefinite
C. Incomplete filling
VII. The position of the pelvis is normal, rotated, displaced
VIII. There is (is not) extrarenal extravasation
IX. A (single, multiple, large, small, opaque, non-opaque) calculus is seen in the pelvis (calyx, cephalad, caudal) kidney (upper, middle, or lower pole)
X. The right (left) ureter is normal in length (short, elongated, redundant)
XI. The contour is normal (narrow, dilated)
A. If dilated it is above calculus (kink, stricture) at ____
XII. The obstruction is partial (complete)
A. Location
XIII. The ureter is displaced downward (laterally, mesially)
XIV. A single (multiple) calculus (size, shape, opaque, non-opaque) is seen in the ____ portion of the ureter
XV. There is (anomaly) of the urinary tract
A. Congenital or acquired
XVI. The examination is indicative of
A. Nephroptosis
B. Pyelitis
C. Pyelonephritis
D. Hydronephrosis
E. Pyonephrosis
F. Hydroureter
G. Tuberculosis
H. Tumor
I. Cyst
J. Polycystic disease
K. Perinephric abscess (fistula)
L. Ruptured kidney
M. Tumor in ureter
N. Ureteritis
O. Bladder
1. Diverticulum
a. Single, multiple
b. Large, small
2. Stone
a. Single, multiple
b. Large, small
3. Tumor
4. Fistula
5. Cystocele
6. Ureterocele

SIALOGRAPHY

I. Preliminary AP, lateral, oblique and axial projections revealed the presence (or absence) of
A. Calculi in the parotid (Stensen's) Duct, or submaxillary (Wharton's Duct)
II. Passage of graduated lacrimal dilators served to dilate the ____ duct sufficiently for

A. Injection of ____ cc. of Lipiodol with excellent visualization of the entire duct and connecting radicles or
B. Abnormal dilatation of the duct was demonstrated suggesting
   1. Stricture of the duct or calculus with
      a. Ectasia and loss of finer radicles suggesting
         1. Chronic inflammatory changes with cavitation or small punctate areas of ectasia indicative of chronic sialadenitis
         2. Displacement of normal glandular architecture likely by expanding or infiltrating tumor

III. After use of a sialogogue, the main duct and its branches emptied
   A. Normally, without retention of opaque material or
   B. Abnormally, with retention of opaque material in punctate areas of ectasia in the parenchyma of the gland

WRITING ROENTGENOLOGICAL REPORTS

Early in the career of a resident in RADIOLOGY, it becomes necessary to write reports representing an analysis of pathologic changes registered on films. Anatomic, pathologic, and physiologic changes observed in the radiographic examinations should be correlated with known clinical symptoms and findings. Understandably, he should make his report of the greatest possible value to the consulting or attending physician so that the most benefit may accrue to the patient.

To this end, it is necessary that an analysis proceed from the general to the particular with a detailed study of observable changes. These should be discussed and related to possible physical and physiological findings. Use of the terminology outlined above by Doctors Fisher, Bovard and Bacon will aid as convenient grooves into which thoughts may be channeled. It quickly becomes apparent to the thoughtful student that just the right word or phrase is needed to convey an exact meaning. This is particularly important in Radiology where the written report represents the total effort of the x-ray department personnel in behalf of the patient.

Generally, the radiologist will observe carefully every part of a film and dictate observed changes in detail. It is helpful to the referring physician if the part under study is first identified clearly in capital letters as, for example, CHEST. Then a statement should be made indicating the radiographic projections as PA, Lateral, Oblique, Decubitus, etc. It is redundant and useless to repeat the part being examined as, for example, *CHEST:* X-ray examination of the chest shows. . . . Here "x-ray" is understood and we have already named the part being examined. Much more informative is the following: *CHEST:* PA and lateral projections reveal. . . .

In x-ray examinations of the skull, paranasal sinuses, and mastoid processes, it is frequently helpful to name all the views or positions utilized so that the referring doctor will appreciate that all necessary angles have been covered. With reference to the gastrointestinal tract, a statement regarding fluoroscopy is usually in order such as: "Roentgenoscopic (or fluoroscopic) and roentgenographic (or radiographic) examination revealed. . . ." Usually, the fluoroscopic findings should be kept in the past tense since the procedure generally has been carried out several hours before the report is dictated. In dictating review of the films made during the radiographic examination, however, the statements can be made either in the past tense or brought up to the present. The tenses should

not be mixed from sentence to sentence. This is certainly annoying if not confusing to the reader.

To promote brevity and clarity in radiological reports, all repetition and redundancy must be avoided. A report stating, "No evidence of an active ulcer is seen *at this time*," is superfluous. The reader knows the time is the present. Therefore, "at this time" should be deleted. Frequently, in a borderline case, it is difficult to say if there is, in fact, any departure from the normal. One may not feel entirely justified in saying "There are early evidences of degenerative arthritis . . ." and may say instead, "*Very minimal* signs are *seen*. . . ." But close analysis will convince one that minimal *is* the *least*, as maximum is the most, with no degrees or qualification.

The listing of negative findings may be a good exercise for medical students, interns and, perhaps, even residents in radiology but should not occupy the body of reports for busy clinicians. Just as we are anxious for the referring doctor to tell us the patients' complaints, so should we be careful to note any specific questions asked in the request for examination and give specific answers if possible.

After having outlined his analysis and observed in detail the variations from normal, the radiologist should make a diagnosis or state an opinion which is most consistent or compatible with all the features taken into consideration. Then, the report should be concluded with a short SUMMARY, IMPRESSION, OPINION, or CONCLUSION. It should be succinct and state only the CONCLUSION or IMPRESSION, avoiding repetition of all the reasons for the diagnosis which presumably have been thoroughly covered in the body of the report. This will save time for the clinician who may wish to know quickly the opinion of the radiologist. If a report is quite brief, it may not be necessary to add a CONCLUSION or IMPRESSION to the diagnostic statement.

Finally, the reporting radiologist should add a coding reference for all diagnoses. The determination of exactly how and why a particular diagnosis should be coded will necessitate careful thought. It is essential, moreover, in making and maintaining a valuable teaching file.

With reference to survey films, as of the chest, generally it is considered preferable to use *NORMAL* rather than *NEGATIVE*, since the latter implies the opposite *AFFIRMATIVE* or *POSITIVE* for the abnormal. Or, x-ray examination of the chest may simply state: "PA and lateral projections reveal the thoracic cage and its contents to be within normal limits." If stable primary tuberculosis, manifested by calcified hilar glands and a parenchymal Ghon calcified focus, is diagnosed, it is best to name the abnormal finding precisely rather than to imply it by using the phrase "There is no evidence of active pulmonary

tuberculosis present." This description should not be used if there is no evidence of a healed lesion, because it becomes a mere recitation of negative findings. Moreover, in the case of a normal chest radiograph, the statement, "There is no active disease present . . ." would imply that occult or inactive disease exists, which is incorrect.

In this phase of the subject, one is also reminded of the incorrect use of the word PATHOLOGY when what is meant is pathological alteration or finding. "There is no pathology present . . ." has been quite generally adopted by common usage, but it is not correct. Preferably: "There is no pathological alteration observed" or, "There is no departure from the normal." In the presence of some rather nondescript changes in or about joints, the radiologist may sometimes report, "There is evidence of *an arthritis* seen." This term is too loose to convey any meaning. It would be better to make an exact analysis and interpretation of the changes observed: "Minimal lipping with beginning spur formations is seen at the articulating margins, with some thinning of the cartilage and minimal eburnation of the underlying bone. These changes are compatible with a diagnosis of early degenerative arthritis." Similarly, the term "spurring," to indicate reactive bone changes in several forms of arthritis, is not as definitive as an exact statement about spurs, e.g., "There are small (moderate, large) spurs projecting from the anterior and lateral articulating margins of the vertebral bodies with intervertebral bridging at several points. These changes are indicative of advanced degenerative arthritis of the thoracic vertebrae." Such considerations as these may seem dogmatic, but when one knows the need for imparting a specific meaning, then an exact choice of words is important.

Review of some strictly anatomic terms in RADIOLOGY highlights the extent of inaccurate usage and language. In referring to the chest, for example, one often speaks incorrectly of the *DIAPHRAGMS*. There is a right and left hemidiaphragm, but together these constitute one *DIAPHRAGM*. It is never correct to speak of the "leaves" of the diaphragm since this term has no relation to any anatomic description of this structure. Dome(s) of the diaphragm may be acceptable as being quite descriptive in the vernacular, but again, is not an anatomical term. Many radiologists report on *SINUSES:* Venous sinuses? Draining sinuses? Sinuses of Valsalva? Better to use PARANASAL SINUSES or ACCESSORY NASAL SINUSES.

All radiologists should know the BNA (Basle Nomina Anatomica) adopted in 1895 and revised in 1933 by the Anatomical Society of Great Britain and Ireland which contains many improvements. The latest revision was by The International Congress of Anatomists' meeting in Paris in 1955 which brought it up to date. Even today, following the British vernacular tradition in vogue

in the United States prior to the BNA, there is still a tendency to use some of the terminology outmoded by the BNA.[1] This is understandable since it was the British tradition of nomenclature that was so familiar to American clinicians of a generation or more ago. Examples are "spine" for vertebral column, "dorsal vertebrae or spine" for thoracic vertebrae, "os calcis" for calcaneus, "malar bone" for zygomatic bone, "metopic suture" for the variable frontal suture, "odontoid process" for dens. The obsolescence of these and many more names is further confirmed in the new list. On the other hand, usage and other factors have gained official acceptance for such names as "axis" for epistropheus, "pedicle" of the vertebral arch for root of the vertebral arch, "trapezium" for greater multangular bone, "trapezoideum" for lesser multangular bone, "scaphoid bone" for navicular bone of the hand. In fact, except for the phalanges, there is now no duplication, as formerly, of names of the bones of the hands and feet. As a result of extensive clinical usage, intervertebral disc now replaces intervertebral fibrocartilage. Also in the interest of accuracy, "optic foramen" has been changed to optic canal.

The new Nomina Anatomica, having been accepted by anatomists internationally, probably will stand for many years. There will be changes, however, as concepts of morphology change with knowledge of function. In this way, the association of the lumbar vertebrae and sacrum may come to be officially recognized by the already commonly used term lumbosacral junction or region. However, radiologists will not find in the new list such phrases as "pars interarticularis" of the vertebra or "outflow tract" of the heart. Adoption of these terms will have to be determined by acceptance in general usage.

The use of eponyms is probably here to stay. Many have originated as a means of honoring the physician first making certain observations, but frequently it is difficult to associate the signs and symptoms of the disease or syndrome with the eponym. On the other hand, use of a single name, such as "Ebstein's Deformity," to an esoteric group may serve to communicate the meaning of what is meant more easily than the phrase "enlarged right auricle from deformed tricuspid valve associated with a patent foramen ovale." Where several names are attached to the same condition, and frequently mixed in the order by which they are known, such as "Hand-Christian-Schüller Disease," the use of such terms as "Reticuloendothelioses," "Lipoid Storage Diseases," "Lipoid Granulomatosis," or "Xanthomatoses" may be preferable. Where a single name like Von Recklinghausen's may be applied to two entirely different entities, as "Hyperparathyroidism with Osteitis Fibrosa Cystica" and "Neurofibromatosis," elimination of the eponym is surely in the best interest of clarity.

[1] Carnwell, W. S.: Anatomy of Names, *Med. Radiog. & Photog., 32:* 1, 2, 1956.

Likewise, Paget's Disease may mean osteitis deformans or malignant ulceration of the areola and nipple of the mammary gland. Similarly, it is more exact to say "lower esophageal ring" rather than "Schatzki ring," "Inverted 3 sign" instead of "Frostberg's Epsilon Sign," and "Regional Enteritis" is more informative than "Crohn's Disease."

It is consistent with the aim of medical science to eliminate confusion and generalities whenever possible. Physicians certainly prefer and surely strive for exactness in all phases of medicine. Through precise and concise reporting, the radiologist can make a small contribution towards this end. In addition, these habits established early in a career in radiology may well carry over into writing papers and reports. The stature of the individual will be enhanced by good medical grammar and language.

When the report has been thoroughly thought out, dictated, and given to the secretary, there remain some purely mechanical considerations of *format.* Everyone will have his own ideas of the best arrangement in this regard and no inflexible rule can or should be laid down. The following SAMPLES OF ROENTGENOLOGICAL REPORTS show various styles of arrangement, and are believed to represent succinct, complete, and informative statements about the various types of roentgenological examinations.

SAMPLE ROENTGENOLOGICAL REPORTS

UNIVERSITY OF PITTSBURGH
WESTERN PSYCHATRIC INSTITUTE AND CLINIC

REQUEST FOR
X-RAY EXAMINATION

Patient: *Swingle, Jack* Age: *23* Date of Admission: *7/5/58* File No.: *5439*

Address: *10 Twin Oaks Drive* Room: *807* Floor: *8* O. P. D. Check: ☐

Requested by: *J. D. Jones, M. D.*

Diagnosis of Suspected Condition with Duration of Illness or Date of Injury and Physical Findings:

The patient slipped and fell in shower breaking fall with his left hand. His wrist is swollen, deformed and tender. There is a typical silver-fork deformity suggesting a Colles' fracture.

Request: *X-RAY EXAMINATION, LEFT FOREARM AND WRIST.*

Date: *7/5/58*

X-Ray No.: *1908* Date: *7/6/58*

X-Ray Report

LEFT FOREARM AND WRIST: PA and lateral views reveal a transverse fracture of the distal head of the radius with dorsal displacement of the distal fragment and malalignment with the radiocarpal joint. There is also a fracture of the styloid process of the ulna. There is lateral deviation of the hand on the forearm.

POST-REDUCTION EXAMINATION: PA and lateral views, with an anterior and posterior plaster splint applied to the forearm, reveal complete reduction of the fractured fragment of the distal end of the radius and of the styloid process of the ulna. The normal anatomical relations have been entirely restored and the radiocarpal joint makes a normal right angle with the longitudinal axis of the radius.

IMPRESSION: 1) *COLLES' FRACTURE OF THE LEFT FOREARM INVOLVING THE DISTAL HEAD OF THE RADIUS AND THE STYLOID PROCESS OF THE ULNA.*
2) *PERFECT ANATOMICAL REALIGNMENT OF THE FRACTURED FRAGMENTS IN THE POST-REDUCTION FILMS MADE AFTER APPLICATION OF PLASTER SPLINTS.*

cc
32.100

J. D. Blank M.D.
ROENTGENOLOGIST

UNIVERSITY OF PITTSBURGH
WESTERN PSYCHIATRIC INSTITUTE AND CLINIC

REQUEST FOR
X-RAY EXAMINATION

Patient: *Wilson, Mary Lou* Age: *25* Date of Admission: *6/25/57* File No.: *9910*

Address: *231 South Hershey Drive* Room: *602* Floor: *6* O. P. D. Check: ☐——

Requested by: *J. D. Jones, M. D.*

Diagnosis of Suspected Condition with Duration of Illness or Date of Injury and Physical Findings:

Fell, injuring right shoulder. Since the accident, the patient is unable to raise her arm, or turn it normally.

Request: *X-RAY EXAMINATION, RIGHT SHOULDER.*

Date: *6/26/57*

X-Ray No.: *7198* Date: *6/27/57*

X-Ray Report

RIGHT SHOULDER: AP and lateral trans-thoracic projections reveal that the right humerus is displaced downward and the head of the bone lies anteriorly to the glenoid fossa of the scapula. This is seen best in the lateral view, although in the AP projection, it is apparent that there is a definite distortion of the relation of the head of the humerus to the clavicle and coracoid process of the scapula.

IMPRESSION: ANTERIOR SUBCORACOID DISLOCATION OF THE HUMERUS.

hs
32.300

J. D. Blank M.D.
ROENTGENOLOGIST

UNIVERSITY OF PITTSBURGH

FALK CLINIC

REQUISITION FOR ROENTGEN EXAMINATION

Clinic No.: *110-009* X-ray No.: *9910* Date: *February 5,* 1958

Name of Patient: *Smith, Norah Jean* Age: *62* Weight: *190* Height: *5'6"*

Address: *4198 Lakeview Boulevard*

Department in Clinic: *Orthopedic*

Referring Physician: Dr. *S. W. Jones*

Region to be examined: *Lumbar spine and pelvis*

Clinical Diagnosis: *Arthritis of unknown type.*

Information Desired: *Radiographic changes in lumbar, lumbosacral vertebrae and pelvis.*

Date of Report: *Feb. 8, 1958*

Roentgenological Findings:

LUMBAR, LUMBOSACRAL VERTEBRAE AND PELVIS: AP, lateral and oblique views made in both the prone and recumbent positions reveal thinning of the cartilages in the apophyseal joints bilaterally with minimal marginal sclerosis of the articulating surfaces. The intervertebral discs show slight thinning, and there are moderate sized spurs projecting from the articulating margins of the lumbar vertebrae both anteriorly and laterally.

The sacroiliac joints are well demonstrated in the oblique views and show bilateral sclerosis of their margins, slightly more marked on the right than on the left side, and with subchondral cystic changes frequently associated with degenerative arthritis.

It is believed that these are cystic changes rather than evidence of metastatic malignant disease, as these radiolucent areas are slightly less sharply marginated than is usually seen with osteolytic metastases. There is no evidence of osteolytic changes in the neighboring bones.

IMPRESSION: 1) MODERATELY ADVANCED DEGENERATIVE ARTHRITIS INVOLVING THE LUMBAR, LUMBOSACRAL VERTEBRAE.
2) MODERATELY ADVANCED DEGENERATIVE ARTHRITIS OF THE SACROILIAC JOINTS, ASSOCIATED WITH SUBCHONDRAL CYSTIC CHANGES.

jas
37.700

J. D. Blank M.D.
ROENTGENOLOGIST

UNIVERSITY OF PITTSBURGH
FALK CLINIC

REQUISITION FOR ROENTGEN EXAMINATION

Clinic No.: *40128* X-ray No.: *116-942* Date: *February 20,* 1958

Name of Patient: *Stark, Mary* Age: *62* Weight: *163* Height: *5'1"*

Address: *119 South 8th Street*

Department in Clinic: *Ophthalmology*

Referring Physician: Dr. *J. S. Jones*

Region to be examined: *Skull and Paranasal Sinuses.*

Clinical Diagnosis: *Proptosis with visual disturbances, left eye. Vertigo, 5 years.*

Information Desired: *Evidence of intracranial tumor?*

Date of Report: *Feb. 23, 1958*

Roentgenological Findings:

SKULL AND PARANASAL SINUSES: Multiple views reveal minimal demineralization of the sella turcica which may indicate slight increase of intracranial pressure extending over a considerable period of time, although some of this appearance may be due to the age of the patient.

An area of increased density is seen in the PA view involving the orbital surface of the greater wing of the left sphenoid bone with partial obliteration of the lower half of the oblique orbital line extending into the sphenomaxillary surface of the infratemporal tubercle. In the lateral view, this area of increased bony condensation is seen to involve the arcuate line which normally delineates the anterior wall of the middle cranial fossa on the affected side with no evidence of change of this line on the opposite side.

In the axial view, the dense mass is seen to involve the orbital surface of the greater wing of the left sphenoid bone just posterior to the inferior orbital fissure and to extend posteriorly into the anterior wall of the middle cranial fossa where the semicircular line marking the projected cross section of the cerebral surface of the greater wing of the sphenoid bone is absent.

In the Towne or occipital projection, the dense bony condensation of the sphenomaxillary surface of the infratemporal tubercle beneath the orbital surface of the left sphenoid bone is most clearly shown. In the optic foramen views, there is some thickening of the bone around the left optic foramen although the tumor mass is not seen definitely to extend this far medially.

It is believed that the area of bony hyperostosis represents a meningioma involving the left side of the greater and lesser wings of the sphenoid bone extending backward into the left middle cranial fossa.

There is also observed hyperplastic sinusitis, with polypoid thickening of the lining membrane, involving principally the right maxillary sinus.

IMPRESSION: 1) *MENINGIOMA INVOLVING PRINCIPALLY ORBITAL SURFACE, GREATER WING OF THE LEFT SPHENOID BONE, WITH EXTENSION TO ANTERIOR WALL MIDDLE CRANIAL FOSSA ON THE SAME SIDE.*

2) *HYPERPLASTIC SINUSITIS WITH POLYPS, RIGHT MAXILLARY SINUS.*

jas
38.610
61.500

J. D. Blank M.D.
ROENTGENOLOGIST

UNIVERSITY OF PITTSBURGH
WESTERN PSYCHIATRIC INSTITUTE AND CLINIC

REQUEST FOR
X-RAY EXAMINATION

Patient: *Herbert J. Carroll* Age: *47* Date of Admission: *12/30/56* File No.: *2963*

Address: *Perryopolis* Room: *720* Floor: *7* O. P. D. Check: ☐____

Requested by: *Dr. Brooker*

Diagnosis of Suspected Condition with Duration of Illness or Date of Injury and Physical Findings:

Grand mal seizures for two years becoming more frequent in the last six months.

Request: *LEFT CAROTID ARTERIOGRAM.*

Date: *1/7/57*

X-Ray No.: *5095* Date: *1/16/57*

X-Ray Report

LEFT INTERNAL CAROTID ANGIOGRAM: Serial views in both the AP and left lateral projections reveal excellent visualization of the arterial tree on the left side with some anatomical variations present. The usual angular branch of the middle cerebral artery is not clearly seen, but the remainder of the Sylvian Group are clearly shown and there is no evidence of displacement of their normal courses. There is nothing to suggest a tumor stain.

A reverse curvature of the usual position of the left anterior cerebral artery is seen but this is believed to represent a normal anatomical variation as there is no evidence of displacement across the midline. There is likewise an anatomical variation of the callosomarginal artery in that it has branched, but after branching, shows a normal distribution. There is no evidence of displacement of the pericallosal artery.

IMPRESSION: EXCEPT FOR SOME NORMAL ANATOMICAL VARIATIONS OF DISTRIBUTION OF THE LEFT INTERNAL CAROTID CIRCULATION, NO EVIDENCE OF PATHOLOGICAL ALTERATION.

cc

J. D. Blank M.D.
ROENTGENOLOGIST

UNIVERSITY OF PITTSBURGH
WESTERN PSYCHIATRIC INSTITUTE AND CLINIC

REQUEST FOR
X-RAY EXAMINATION

Patient: *Block, Charles E.* Age: *32* Date of Admission: *10/14/57* File No.: *8714*

Address: *619 Fourth Avenue* Room: *714* Floor: *7* O. P. D. Check: ☐____

Requested by: *R. D. Smith, M.D.*

Diagnosis of Suspected Condition with Duration of Illness or Date of Injury and Physical Findings:

Chronic brain syndrome.

Request: *PNEUMOENCEPHALOGRAM.*

Date: *5/14/58*

X-Ray No.: *5683* Date: *5/22/58*

X-Ray Report

PNEUMOENCEPHALOGRAM: Examination of multiple projections of the skull following intraspinal injection of 50 cc. of air and withdrawal of 70 cc. of fluid reveals satisfactory visualization of the IV ventricle, the aqueduct and III ventricle, all of which appear normal. The lateral ventricles are visualized, but are filled unequally initially, later however, appearing quite symmetrical. There is bilateral dilatation of the anterior horns and anterior thirds of the bodies of each lateral ventricle slightly more marked on the right than on the left side, as shown particularly on the recumbent AP and erect AP films at 22 hours.

The subarachnoid pathways are filled over the convex surfaces of the cerebral hemispheres, and on the 22 hour film show moderate spotty dilatation principally in the left anterior frontal and temporal regions. The basal cisterns appear normal.

IMPRESSION: 1) *BILATERAL MINIMAL TO SLIGHT DILATATION OF THE ANTERIOR HORNS AND ANTERIOR THIRDS OF THE LATERAL VENTRICLES SLIGHTLY MORE MARKED ON THE RIGHT THAN ON THE LEFT SIDE.*
2) *MINIMAL EVIDENCE OF CORTICAL ATROPHY IN THE LEFT ANTERIOR FRONTAL AND TEMPORAL REGIONS.*

cc

J. D. Blank M.D.
ROENTGENOLOGIST

UNIVERSITY OF PITTSBURGH
WESTERN PSYCHIATRIC INSTITUTE AND CLINIC

REQUEST FOR
X-RAY EXAMINATION

Patient: *Spinner, Harold G.* Age: *33* Date of Admission: *3/4/55* File No.: *8654*

Address: *407 Spruce Street* Room: *715* Floor: *7* O. P. D. Check: ☐

Requested by: *J. D. Young, M.D.*

Diagnosis of Suspected Condition with Duration of Illness or Date of Injury and Physical Findings:

Multiple sclerosis with weakness and ataxia of lower extremities. These changes have been progressive for over 1 year but have been more rapid in the past three months. The patient has paraplegia and urinary retention.

Request: *MYELOGRAM.*

Date: *3/11/55*

X-Ray No.: *538* Date: *3/12/55*

X-Ray Report

MYELOGRAM: A small amount of spinal fluid was withdrawn and 6 cc. of Pantopaque was injected into the subarachnoid space. Under fluoroscopic control, the opaque medium was seen to flow evenly and smoothly with tilting of the table.

As the patient was tilted with the head downward, a definite obstruction to flow of the opaque medium was encountered at the level of the third thoracic vertebra. Examination of spot films made in PA and oblique projections reveals a semicircular cutoff of the opaque column at the level of T3 with a smoothly marginated extension of the mass along the right side of the cord and believed to represent an extramedullary tumor, probably meningioma.

IMPRESSION: SPINAL CORD TUMOR, PROBABLY MENINGIOMA, AT THE LEVEL OF T3.

cc
37.500

J. D. Blank M.D.
ROENTGENOLOGIST

RADIOLOGIST'S REPORT

University of Pittsburgh

Falk Clinic

Date Requested: *December 4,* 1957

Name of Patient: *Small, Bertha* Age: *32* Unit No.: *117-451*

Clinic: *Otorhinolaryngology*

Referring Physician: Dr. *R. Sabeh*

Clinical Diagnosis: *Chronic discharge right ear.*

Region to be examined: *Mastoids.*

Date of Report: *Dec. 7, 1957*

MASTOID PROCESSES AND TEMPORAL BONES: Comparative views using the lateral oblique, Stenver's, Mayer and Towne projections reveal no evidence of abnormality in the left side. A rather large operative defect is seen in the region of the right mastoid antrum, and marked sclerosis of the bone of the petrous pyramid surrounding the semicircular canals and extending to the tip is seen. There is also erosion of the bone bordering the posterior edge of the petrous ridge adjacent to the porus acousticus.

There is likewise thickening and bony sclerosis in the sinodural angle (Citelli's Angle) probably indicative of an infectious process in this region. An additional PA and AP view of the skull would be helpful in definitely localizing the extent of the sclerosing process.

IMPRESSION: CHRONIC SUPPURATIVE BONE DISEASE INVOLVING THE RIGHT PETROUS PYRAMID, SINODURAL ANGLE, AND PETROUS RIDGE IN THE NEIGHBORHOOD OF THE PORUS ACOUSTICUS AND EMINENTIA ARCUATA.

jas
62.500

J. D. Blank
RADIOLOGIST

UNIVERSITY OF PITTSBURGH

FALK CLINIC

REQUISITION FOR ROENTGEN EXAMINATION

Clinic No.: *77-998* X-ray No.: *44159* Date: *September 12,* 1957

Name of Patient: *Farley, Mary Jean* Age: *47* Weight: *185* Height: *5'11"*

Address: *1095 Bascom Avenue*

Department in Clinic: *Otorhinolaryngology*

Referring Physician: Dr. *E. F. Kleinberg*

Region to be examined: *Accessory nasal sinuses.*

Clinical Diagnosis: *Chronic suppurative sinusitis.*

Information Desired: *Extent of disease.*

Date of Report: *Sept. 15, 1957*

Roentgenological Findings:

PARANASAL SINUSES: Multiple projections reveal a marked destructive process involving the right maxillary sinus with invasion of the lateral nasal cavity postero-laterally as well as the infratemporal surface of the maxillary sinus. This destructive process extends backward into the middle cranial fossa where there is loss of the normal bony landmarks of the anterior wall of the middle cranial fossa. The remaining paranasal sinuses show no definite evidence of abnormality.

IMPRESSION: EXTENSIVE NEOPLASTIC INFILTRATION INVOLVING THE RIGHT MAXILLARY SINUS, LATERAL NASAL CAVITY AND EXTENDING INTO THE MIDDLE CRANIAL FOSSA ON THE RIGHT SIDE.

jas
61.400

J. D. Blank M.D.
ROENTGENOLOGIST

UNIVERSITY OF PITTSBURGH
WESTERN PSYCHIATRIC INSTITUTE AND CLINIC

REQUEST FOR
X-RAY EXAMINATION

Patient: *Walker, James* Age: *35* Date of Admission: *2/15/57* File No.: *7166*

Address: *115½ Bates Street* Room: *702* Floor: *7* O. P. D. Check: ☐——

Requested by: *Dr. J. D. Jones*

Diagnosis of Suspected Condition with Duration of Illness or Date of Injury and Physical Findings:

Severe pain in face and jaws with inability to close mouth. These symptoms developed today after a convulsive seizure.

Request: *SKULL AND JAWS.*

Date: *2/15/57*

X-Ray No.: *8652* Date: *2/16/57*

X-Ray Report

MANDIBLE: Multiple projections including AP, oblique lateral, axial and Towne views reveal bilateral anterior temporomandibular joint dislocations into the fossae anterior to the articular tubercles of the temporal bone. These changes are very clearly demonstrated on all of the projections with the condyle on each side being definitely dislocated.

After reduction of the bilateral dislocations, the normal relationships of the condyles to the mandibular fossae is restored and there is no evidence of fracture.

IMPRESSION: 1) *BILATERAL COMPLETE TEMPOROMANDIBULAR JOINT DISLOCATIONS.*
2) *COMPLETE RESTORATION OF NORMAL BONY RELATIONS FOLLOWING REDUCTION.*

cc
39.400

J. D. Blank M.D.
ROENTGENOLOGIST

RADIOLOGIST'S REPORT

University of Pittsburgh

Falk Clinic

Date Requested: *May 18,* 1957

Name of Patient: *Scott, Marvin H.* Age: *62* Unit No.: *118-009*

Clinic: *Dental*

Referring Physician: Dr. *J. D. Smith*

Clinical Diagnosis: *Dental caries and apical abscesses.*

Region to be examined: *Full mouth survey.*

Date of Report: *May 21, 1957*

Dental radiographic examination* reveals evidence of the following:
The maxillary left third molar is impacted.
Vertical pocket in alveolar process on mesial of maxillary left first molar.
A slight area of apical periodontitis of the maxillary left second bicuspid.
Residual root tip in maxillary right first bicuspid area.
The maxillary right first molar shows apical circumscribed rarefying osteitis.
Horizontal loss of alveolar process to the lower anteriors.

jas

J. D. Blank
RADIOLOGIST

* Report courtesy of J. C. Eselman, D.D.S., Professor of Oral Roentgenology, School of Dentistry, University of Pittsburgh.

RADIOLOGIST'S REPORT

University of Pittsburgh

Falk Clinic

Date Requested: *July 16,* 1956

Name of Patient: *Rhom, Barbara J.* Age: *29* Unit No.: *136-446*

Clinic: *Breast*

Referring Physician: Dr. *R. B. White*

Clinical Diagnosis: *Probable metastases ribs and pleura.*

Region to be examined: *Chest, PA and Lateral.*

Date of Report: *July 18, 1956*

CHEST: Pa and lateral views without previous films available for comparison reveal a normal right breast shadow with none present on the left side. There are numerous punched-out defects of varying size involving practically all of the ribs and both clavicles as well as the axillary border of the left scapula. There is nodular thickening of the lung markings bilaterally with clouding in each costophrenic sulcus suggesting small pleural exudates. There is no evidence of hilar adenopathy.

In the lateral view, there is seen to be marked compression of the 8th thoracic vertebra which probably represents a pathological compression fracture.

The heart and aorta are within average limits of normal size, shape and position.

IMPRESSION: 1) *MULTIPLE OSTEOLYTIC DEFECTS INVOLVING THE RIBS, CLAVICLES AND LEFT SCAPULA, PROBABLY REPRESENTING METASTASES OF MAMMARY CARCINOMA SINCE A MISSING LEFT BREAST IS OBSERVED.*

2) *PROBABLE BILATERAL PLEURAL EXUDATES.*

jas
36.310
88.200

J. D. Blank
RADIOLOGIST

UNIVERSITY OF PITTSBURGH

FALK CLINIC

REQUISITION FOR ROENTGEN EXAMINATION

Clinic No. *11576* X-ray No.: *113-274* Date: *February 2,* 1958

Name of Patient: *Doe, Mary* Age: *14* Weight: *110* Height: *5'3"*

Address: *156 Wilton Boulevard*

Department in Clinic: *Cardiac*

Referring Physician: Dr. *T. M. Jones*

Region to be examined: *Cardiovascular.*

Clinical Diagnosis: *Congenital cardiovascular lesion.*

Information Desired: *Angiocardiogram for delineation of cardiac chambers and great vessels.*

Date of Report: *Feb. 6, 1958*

Roentgenological Findings:

ANGIOCARDIOGRAM: Fifty cc. of 70% Urokon Sodium were injected into the left antecubital vein in 1.5 seconds. A satisfactory bolus of contrast material was obtained and serial films at the rate of 3 per second were exposed during a period of 5 seconds with the patient in a 10° left anterior oblique position.

The superior vena cava is well opacified, as is the right side of the heart. At 1.3 seconds, the left ventricle is noted to be enlarged and the aortic arch is well defined. There is dilatation of the innominate and left common carotid arteries. The left subclavian vein is also markedly dilated and 1 cm. distal to it there is a marked but incomplete constriction of the aorta. A 1.5 cm. segment of descending thoracic aorta is poorly defined, but thereafter the aorta is well demonstrated.

At 2.0 seconds, the internal mammary and numerous collateral arteries are well opacified. At 4 seconds, the contrast material has been entirely dissipated.

*IMPRESSION: INCOMPLETE COARCTATION OF THE DESCENDING PORTION OF THE THORACIC AORTA.**

jas
27.310

J. D. Blank
ROENTGENOLOGIST

* Report courtesy of H. C. Long, M.D., Instructor in Radiology, School of Medicine, University of Pittsburgh

RADIOLOGIST'S REPORT

University of Pittsburgh

Falk Clinic

Date Requested: *May 19,* 1955

Name of Patient: *Carlson, Joseph Lee* Age *54* Unit No.: *80-144*

Clinic: *Medical*

Referring Physician: Dr. *W. L. McCabe*

Clinical Diagnosis: *Neoplasm or peptic ulcer.*

Region to be examined: *Esophagus and upper G. I. tract.*

Date of Report: *May 23, 1955*

ESOPHAGRAM AND UPPER G. I. SERIES: Radioscopic and radiographic examination using barium-water mixture revealed some curling of the lower end of the esophagus and a moderate-sized, sliding type hiatus hernia. This was demonstrated best in the recumbent, lateral and prone positions with barium swallow and straining. No evidence of abnormality was seen in the body of the stomach and the duodenal bulb showed nothing to suggest organic defect.

CINEFLUOROGRAPHIC STUDY: A moving picture strip was exposed on this patient and a very clear demonstration of a sliding type, moderate size hiatus hernia was demonstrated. The stomach emptied rapidly and the small bowel pattern showed no departure from the normal.

IMPRESSION: 1) *MINIMAL EVIDENCE OF CURLING OR CORK-SCREW ESOPHAGUS.*
2) *MODERATE SIZE, SLIDING TYPE HIATUS HERNIA.*
3) *NO DEFINITE EVIDENCE OF PEPTIC ULCERATION OF THE STOMACH OR DUODENUM.*

jas
71.330
72.230

J. D. Blank
RADIOLOGIST

UNIVERSITY OF PITTSBURGH

FALK CLINIC

REQUISITION FOR ROENTGEN EXAMINATION

Clinic No.: *143-001* X-ray No.: *5061* Date: *April 13,* 1958

Name of Patient: *Rosin, Mary E.* Age: *51* Weight: *155* Height: *5'6"*

Address: *1492 Fifth Avenue*

Department in Clinic: *Gastric*

Referring Physician: Dr. *E. F. Thoms*

Region to be examined: *Gastrointestinal tract.*

Clinical Diagnosis: *Question of carcinoma of the pancreas.*

Information Desired: *Upper G. I. Series with special attention to duodenal loop.*

Date of Report: *April 16, 1958*

Roentgenological Findings:

UPPER G. I. SERIES (DUODENUM): Roentgenoscopic and roentgenographic examination by barium-water mixture revealed no evidence of abnormality in the esophagus, cardio-esophageal junction, stomach or duodenum.

Examination of serial films confirms the fluoroscopic findings, no evidence of organic defect being demonstrated in the stomach or duodenum. The duodenal loop is slightly widened, but there is no evidence of a pressure defect. There is doubtful evidence of pathological change at the ampulla of Vater (questionable Epsilon sign of Frostberg). The stomach empties rapidly and the small bowel pattern appears normal.

IMPRESSION: 1) *NO DEFINITE EVIDENCE OF AN ORGANIC DEFECT IN THE STOMACH OR DUODENUM.*
2) *QUESTIONABLE EVIDENCE OF PATHOLOGICAL CHANGES IN THE NEIGHBORHOOD OF THE AMPULLA OF VATER.*

jas

J. D. Blank M.D.
ROENTGENOLOGIST

UNIVERSITY OF PITTSBURGH
WESTERN PSYCHIATRIC INSTITUTE AND CLINIC

REQUEST FOR
X-RAY EXAMINATION

Patient: *Ardle, Mrs. Anabelle* Age: *40* Date of Admission: *11/6/57* File No.: *1537*

Address: *788 South Third Street* Room: *709* Floor: *7* O. P. D. Check: ☐

Requested by: *Dr. J. D. Jones*

Diagnosis of Suspected Condition with Duration of Illness or Date of Injury and Physical Findings:

Persistent abdominal pain and distention of the past six weeks becoming increasingly severe. The patient has nausea and at times, vomiting, and has been unable to eat regular meals for the past week.

Request: *ABDOMINAL AND SMALL BOWEL STUDY.*

Date: *11/8/57*

X-Ray No.: *3751* Date: *11/9/57*

X-Ray Report

SMALL BOWEL STUDY: A preliminary plain film of the abdomen reveals extremely distended loops of bowel scattered throughout the entire abdomen apparently involving the jejunum, ileum and colon. Some gas is seen in the rectosigmoid, and volvulus of the sigmoid colon therefore seems unlikely.

A fixed loop of bowel is seen in the left lower abdominal quadrant, the position of which does not change on lateral recumbent, erect or prone positions and has the appearance of the characteristic "coffee bean sign." This is also associated with the pseudo-tumor sign of Frimann-Dahl, and the findings are strongly suggestive of small bowel strangulation obstruction.

IMPRESSION: PROBABLE STRANGULATION OBSTRUCTION OF THE SMALL BOWEL.

cc
74.510

J. D. Blank M.D.
ROENTGENOLOGIST

UNIVERSITY OF PITTSBURGH
FALK CLINIC

REQUISITION FOR ROENTGEN EXAMINATION

Clinic No.: *110-946* X-ray No.: *4091* Date: *March 4,* 1957

Name of Patient: *Hutchins, John E.* Age: *34* Weight: *138* Height: *5'4"*

Address: *119 Greentree Way*

Department in Clinic: *Gastroenterology*

Referring Physician: Dr. *John J. Watkins*

Region to be examined: *Large Bowel.*

Clinical Diagnosis: *Internal hemorrhoids.*

Information Desired: *Evidence of obstructive or malignant lesion of the large bowel.*

Date of Report: *March 7, 1957*

Roentgenological Findings:

LARGE BOWEL: Roentgenoscopic and roentgenographic examination by barium enema revealed no evidence of obstruction to flow of the opaque medium through the rectum, sigmoid and remainder of the colon to the cecum where the appendix was visualized, but reflux into the terminal ileum was not observed. During the fluoroscopic examination, a number of diverticula filled and were seen along the sigmoid, splenic and transverse portions of the colon.

Examination of films made before and after evacuation confirms the fluoroscopic findings, no evidence of an obstructive lesion being demonstrated, but extensive involvement by diverticulosis is seen. These diverticula involve all segments with the exception of the cecum and the proximal ascending portion of the colon, with small to large size diverticula. These are very numerous in the hepatic flexure, the splenic flexure, the descending colon and sigmoid.

No evidence of muscle spasm, marked serrations or spiking is seen to suggest diverticulitis.

IMPRESSION: EXTENSIVE DIVERTICULOSIS OF THE LARGE BOWEL.

jas
75.200

J. D. Blank M.D.
ROENTGENOLOGIST

UNIVERSITY OF PITTSBURGH
FALK CLINIC

REQUISITION FOR ROENTGEN EXAMINATION

Clinic No.: *98-733* X-ray No.: *61149* Date: *October 15,* 1958

Name of Patient: *Hershey, Marianne* Age: *30* Weight: *120* Height: *5'4"*

Address: *8 Ridge Road*

Department in Clinic: *Medical*

Referring Physician: Dr. *W. L. McCabe*

Region to be examined: *Gallbladder.*

Clinical Diagnosis: *Gallbladder disease.*

Information Desired: *Cholecystogram.*

Date of Report: *Oct. 18, 1958*

Roentgenological Findings:

GALLBLADDER: Cholecystographic examination 12 hours after ingestion of Orabilex reveals excellent concentration of the opaque medium in the gallbladder which is somewhat larger than average size, but of normal shape and position and containing numerous radiolucent, irregularly rounded shadows indicative of calculi.

The gallbladder contracts after the fat meal indicative of normal physiological activity.

IMPRESSION: PHYSIOLOGICALLY ACTIVE GALLBLADDER CONTAINING NUMEROUS RADIOLUCENT CALCULI.

jas
41.171

J. D. Blank M.D.
ROENTGENOLOGIST

UNIVERSITY OF PITTSBURGH

FALK CLINIC

REQUISITION FOR ROENTGEN EXAMINATION

Clinic No.: *129-884* X-ray No.: *66451* Date: *March 16,* 1957

Name of Patient: *Rogers, Roy T.* Age: *57* Weight: *175* Height: *5'10½"*

Address: *19 Lakeview Drive*

Department in Clinic: *Medical*

Referring Physician: Dr. *H. B. Gormley*

Region to be examined: *Abdomen.*

Clinical Diagnosis: *Abdominal and back pain of 18 months duration.*

Information Desired: *Any evidence of calculus in the urinary tracts on plain film examination of the abdomen.*

Date of Report: *March 19, 1957*

Roentgenological Findings:

URINARY TRACT: A survey radiograph of the abdomen reveals 13 small rounded laminated shadows of increased density measuring from .6 to 1.2 cm. in size arranged as a necklace across the abdomen on a level with the second to third lumbar vertebrae. Corresponding with this distribution of apparent calculi, is a roughly U-shaped soft tissue shadow crossing the lumbar vertebrae on a level with the usual position of the kidneys.

This appearance is highly suggestive of a horseshoe kidney containing renal calculi.

IMPRESSION: HORSESHOE KIDNEY WITH RENAL CALCULI.

jas
11.310
12.100

J. D. Blank M.D.
ROENTGENOLOGIST

UNIVERSITY OF PITTSBURGH

FALK CLINIC

REQUISITION FOR ROENTGEN EXAMINATION

Clinic No.: *77-039* X-ray No.: *71990* Date: *April 15,* 1959

Name of Patient: *Starrell, Rose* Age: *44* Weight: *155* Height: *5'4"*

Address: *990 Milburn Avenue*

Department in Clinic: *Cardiac*

Referring Physician: Dr. *J. B. White*

Region to be examined: *KUB.*

Clinical Diagnosis: *Hypertension with history of renal infection.*

Information Desired: *Excretory urogram for question of chronic pyelonephritis.*

Date of Report: *April 18, 1959*

Roentgenological Flndings:

EXCRETORY UROGRAM: A preliminary film of the abdomen shows no evidence of opaque renal, biliary or other calculi. The visceral and gas shadows appear normal as do the bones and joints. There is some convexity of the lumbar vertebrae toward the left side producing slight scoliosis which is probably of no clinical significance.

After injection of the opaque medium, it is promptly concentrated bilaterally with excellent visualization of the kidney pelves and calyces. On the right side, there is definite thickening of the infundibula and clubbing with minimal dilatation of the minor calyces of this kidney.

The left kidney pelvis and calyces show no evidence of abnormality.

The ureters are visualized throughout their extent showing no evidence of displacement or obstruction.

IMPRESSION: PYELONEPHRITIS, RIGHT KIDNEY.

jas
13.200

J. D. Blank M.D.
ROENTGENOLOGIST

RADIOLOGIST'S REPORT

University of Pittsburgh

Falk Clinic

Date Requested: *February 1,* 1955

Name of Patient: *Smith, James D.* Age: *49* Unit No.: *14899*

Clinic: *Medical*

Referring Physician: *R. D. Smith, M.D.*

Clinical Diagnosis: *Tumor right salivary gland.*

Region to be examined: *Right parotid duct and gland.*

Date of Report: *Feb. 4, 1955*

RIGHT PAROTID SIALOGRAM: Preliminary AP and lateral films show no evidence of opaque calculi or other abnormality in the region of the right parotid gland.

A #21 cannula was introduced with ease into the orifice of the right parotid duct and 1.5 cc. of Pantopaque was injected with the patient experiencing considerable discomfort in the right cheek and parotid region.

Examination of films made after above described injection reveals normal visualization of the anterior half of the right main parotid duct, but there is no filling of the posterior half of the duct or of any of the branches in the main body of the gland. These findings suggest obstruction in the mid portion of the right main parotid duct with no evidence of abnormality in the anterior portion of the gland.

IMPRESSION: 1) OBSTRUCTION IN THE MID PORTION OF THE RIGHT MAIN PAROTID DUCT WITH NO VISUALIZATION OF THE POSTERIOR HALF OF THE DUCT OR OF THE RADICLES IN THE PAROTID GLAND.

2) LACK OF VISUALIZATION OF THE POSTERIOR HALF OF THE DUCT, DESPITE USE OF ADEQUATE PRESSURE ON TWO SEPARATE INJECTIONS, SUGGESTS THAT THE OBSTRUCTION IS MARKED, AND PERHAPS EVEN COMPLETE.*

hs
56.210

J. D. Blank
RADIOLOGIST

* Report courtesy of Erwin Beck, M.D., Assistant Professor of Radiology, School of Medicine, University of Pittsburgh.

GLOSSARY

A

A or An—*prefix*, meaning without; as, atonic, without tone.

Å, *abbr.*,—One angstrom unit or one 10-thousandth of a micron (10^{-8} cm.). or 100-millionth of a centimeter, used in physics to measure length of light waves or other electromagnetic radiation. Named for Swedish Physicist Anders Jons Angstrom.

Ab—*prefix*, signifying from, or away from.

Abdomen, *n.*—The body cavity below the chest which contains the abdominal viscera, such as, the stomach, intestines, liver, spleen etc. It is separated from the chest by the diaphragm.

Abduct, *v.*—To draw away from the midline, as to abduct an extremity.

Abduction, *n.*—The act of abducting a part.

Aberrant, *adj.*—Wandering from the normal or usual course.

Aberrant Pancreas—Misplaced pancreatic tissue which may produce pressure upon the duodenum externally, simulating polypoid defects.

Abrasion, *n.*—The scraping away of a portion of the surface of skin or mucous membrane. An artefact on emulsion surface of film.

Abrasion Marks—Disfigurement of the emulsion of an x-ray film from rubbing.

Abscess, *n.*—A collection of pus in tissues associated with necrosis.

Absorb, *v.*—To assimilate fluids or other substances from skin or other body tissues.

Absorption, *n.*—The resultant spectrum after radiation has passed through some absorbing substance. A condition in which a liquid or gas is taken up by and fills the interstitial spaces of a porous substance.

Absorption Bands—Dark bands in an absorption spectrum specific for the absorber.

Absorption Coefficient—The fractional decrease in intensity of a beam of radiation per unit thickness, per unit mass or per atom of absorber.

Absorption X-Ray Spectrum—The part of an x-ray beam which is not absorbed on passage through an absorber. (Also Remnant Radiation.)

Acceleration, *n.*—The rate of change of motion or action or, specifically, an increase in speed.

Accessory, *adj.*—Additional, supplementary.

Accommodation, *n.*—Instantaneous and automatic adjustment of the eye for seeing at different distances. This term is not correctly used with reference to light or dark adaptation. (cf. Adaptation.)

Acetabular, *adj.*—Pertaining to the acetabulum, the rounded cavity on external surface of the innominate bone for the head of the femur.

Acetabular notch—An indentation on the inferior margin of the acetabulum for passage of nerves and vessels into the joint.

Acetabulum, *n.*, *pl.*—**Acetabula**—The joint cavity in the innominate bone for articulation with the head of the femur to form the hip joint.

Achalasia, *n.*—Failure to relax said of muscles, such as sphincters, the normal function of which is a persistent contraction with periods of relaxation of visceral openings.

Achilles, Tendon of—The tendon of the soleus and gastrocnemius muscles inserted into the tuberosity of the os calcis.

Achondroplasia, *n.*—A bone disease in which cartilage is not properly replaced by bone.

Acid Fixing Bath—(acid hypo)—A fixing bath which contains not only hyposulphite of soda, but sulphuric or acetic acid for the immediate stopping of development.

Aclasis, *n.*—Fragmentation or breaking away; pathological tissue developing from and continuous with normal tissue as in chondrodystrophy. (Also Diaphyseal Aclasis)

Acoustic Nerve, *n.*—Auditory nerve or nerve of hearing. The VIII cranial nerve.

A.C.R. *abbr.*,—American College of Radiology.

Acrania, *n.*—Congenital lack of the cranial bones or skull.

Acrocephalo—A combining form meaning pointed head.

Acrocephalosyndactylism—A congenital deformity characterized by a pointing of the top of the head, and syndactylism of the four extremities. (Also Acrocephalosyndactylia.)

Acrocephaly, *n.*—A congenital malformation of the head having a high or pointed cranial vault probably due to premature closure of the cranial sutures. (cf. Turricephaly)

Acromegaly, *n.*—A disease of the pituitary gland in adults which produces overgrowth of bone, especially of the lower jaw and hands.

Acromioclavicular Joint—The joint between the clavicle and acromion process of the scapula.

Acromion, *n.*—Lateral, triangular projection of spine of scapula forming point of shoulder.

Acromion Process, *n.*—The flat bony process from the upper portion of the scapula which forms the prominence of the shoulder.

Actinic, *adj.*—That portion of light which affects

the photographic emulsion and generated by action of x rays on a fluorescent intensifying screen.

Actinic Radiation, *n.*—Radiation able to produce chemical change, as, the effect of light and x rays on a photographic emulsion.

Actinium, *n.*—The parent of a series of decay-products like those of radium, and a naturally-occurring heavy radioactive element. Its atomic number is 89 and atomic weight 227.

Actinomycosis, *n.*—A fungus infection.

Activated Water—A chemically reactive state developed in water by absorbing ionizing radiations, but of transient nature.

Activation Analysis—A chemical analysis based on the detection of characteristic radionuclides following a nuclear bombardment.

Activation Energy—Energy needed to cause a particular reaction to begin.

Activity, *n.*—A colloquial term for radioactivity.

Acute, *adj.*—Having a sudden onset and short course.

Acute Disc Syndrome—Association of herniation of an intervertebral disc with severe pain in the back, spasm, sciatica and diminished knee jerk on the affected side.

Acute Exposure—A short, intense exposure to ionizing radiation. (cf. chronic exposure)

Ad—*prefix*, meaning to or toward.

Ad—*suffix*, also indicating direction toward, such as caudad or cephalad.

Adamantine Epithelioma—A cutaneous tumor containing tooth enamel.

Adamantinoblastoma, *n.*—Synonymous with adamantinoma; also called ameloblastoma, a tumor arising from epithelial rests in the jaw. This tumor is malignant and may metastasize.

Adamantinoma, *n.*—Same as adamantinoblastoma.

Adaptation, *n.*—Spoken of in radiology as dark adaptation of the eyes, that is, staying in a darkened room until it is possible for the eyes to distinguish a low threshold of light. This may be applied to either dark or light adaptation and is a function of the retina of the eyes. (cf. accommodation.)

Adaptometer, *n.*—A device for measuring degree of dark adaptation.

Addison's Disease—Bronze-like pigmentation of the skin, associated with severe prostration, anemia, and digestive disturbances due to disease of the adrenal glands, and usually following a chronic course.

Adduction, *n.*—A drawing of two parts together toward a median plane.

Adenitis, *n.*—Inflammation of the lymph nodes or of a gland.

Adenocarcinoma, *n.*—A carcinoma (cancer) in which the cells are arranged in the form of glands; a malignant adenoma.

Adenoma, *n.*—Tumor of gland-like structure.

Adenomatosis, Pulmonary—Carcinoma of alveolar origin possibly related to bronchiogenic carcinoma, but it is believed that this tumor originates within the alveolar cell proper rather than in the bronchioles or bronchi. (See also terminal bronchiolar carcinoma and alveolar cell carcinoma)

Adenoids, *n.*—A collection of lymphoid tissue in the nasopharynx.

Adenomyxosarcoma, *n.*—Myxosarcoma of a gland, or one blended with adenoma.

Adenopathy, *n.*—Enlargement or disease of lymphatic glands.

Adherent, *adj.*—Stuck together.

Adhesion, *n.*—Sticking together of two surfaces in an inflammatory process, as, for example, the adhesions of the pleura from pleurisy, or, of peritonitis.

Adhesive Pain—Pain from pulling or contraction of adhesions.

Adhesive Pericarditis—Adhesion of the pericardium to the heart secondary to inflammatory changes. (Pick's disease.)

Adipose Tissue—Fatty tissue.

Adrenal, (Suprarenal) *n.*—A gland situated near each kidney usually at the upper pole which secretes a hormone epinephrine. (Trade name Adrenalin.)

Adsorption, *n.*—Adhesion of the surface of one substance to that of another.

Adventitious, *n.*—Out of its usual place, such as a tooth.

AEC—Atomic Energy Commission (United States Atomic Energy Commission). Established by act of Congress 1946, amended 1954.

Aerated, *adj.*—Filled with air.

Aerocele, *n.*—An air filled tumor or cyst as in laryngocele; any air distention of a natural cavity.

Aerohematoma,[1] *n.*—A complication of aerosinusitis in which a characteristic rounded density of submucosal hematoma in the frontal sinus is usually but not always demonstrable at the first roentgen examination.

Aeromamography, *n.*—Examination of the breasts after air injection in the space behind them.

Aerophagia, *n.*—Air swallowing.

Aerosinusitis,[1] *n.*—Inflammation of the paranasal sinuses caused by high altitude flying.

Afferent, *adj.*—Moving toward a center or an organ. (cf. efferent.)

[1] Cooke, John A.: Aerosinusitis; with special reference to Roentgen Diagnosis. *Am. J. Roentgenol. & Rad. Ther.*, *57*:3, Mar. 1947.

Ag—Chemical symbol for silver. Latin for argentum.

Agenesis, *n.*—Complete failure of a part or organ to develop.

Agglomerate, *adj.*—Collected into a mass but not coherent.

Agnogenic Myeloid Metaplasia[1]—Widespread, diffuse, overall increase in bone density usually involving long bones of upper and lower limbs, pelvic girdle, thoracic cage and vertebrae. These changes are associated with anemia of varying degrees of severity and hepatosplenomegaly. (Same as Myelosclerosis with myeloid metaplasia.)

Agranulocytosis, *n.*—An acute disease manifested by marked leucopenia and neutropenia associated with ulcerative lesions of mucous membranes of throat, G.I. tract and skin.

Ainhum, *n.*—A disease marked by progressive constriction of the toes, usually affecting negroes in tropical countries, and resulting in gradual amputation of the parts.

Air-Bells—Small spherical clear areas on the finished x-ray film due to bubbles of air adhering to the emulsion during development and preventing the action of the developer on these areas.

Air Contrast Enema—A barium enema made with a thin mixture of barium sulfate and suspending materials which is expelled and followed by injection of air to furnish double contrast of the opaque medium with air.

Air Contrast Study[2]—A study of stomach and duodenum by utilizing gas present in the stomach bubble or added by means of an effervescent drink. One is able to so rotate the patient in different positions for radiography, that an air and barium contrast study can be obtained. (See Hampton Maneuver.)[3]

Air Crescent Sign.—A radiolucent crescent of air found in Echinococcus cysts of the lung after a small rupture. Air then occupies the potential space between the pericyst and the ectocyst. (See also Morquio's Sign)

Air-Cystography—Pneumocystography or x-ray visualization of the urinary bladder after injection of air.

Air-Dose—Radiation dose (in roentgens) at a point in free air. It consists only of the radiation of the primary beam and of that scattered from the surrounding air.

Air-Wall Ionization Chamber—(X or gamma rays) An "air-equivalent" ionization chamber in which the materials of the wall and electrodes are of substances essentially equivalent to that in a free air ionization chamber.

Al—Chemical symbol for aluminum (or Aluminium).

Ala, *n.*—A winglike process or structure such as the ala of the nose.

Albers-Schönberg Disease[4]—Characterized by marked condensation of bone, marble bone or osteopetrosis.

Albright's Syndrome[5]—Characterized by fibrous dysplasia of bone, precocious puberty in female infants and pigmentation of the skin roughly corresponding to the areas of bone involvement.

-algia—*suffix*, a combining form indicating pain.

Alimentary Canal—A continuous tube which extends from the mouth to the anus; the gastrointestinal tract.

Alinement, (Alignment) *n.*—To bring into a straight line.

Alkaline, *adj.*—The opposite reaction of acid.

Alkaptonuric Ochronosis—Discoloration of some tissues of the body from the deposit in them of alkapton.

Alpha Particle—Positively charged nucleus of a helium atom emitted spontaneously from radioactive substances in their change from one element into another.

Alpha Rays—Streams of fast moving alpha particles.

Alternating Current—(Abbr. A.C.) A flow of electrons creating an electric current which regularly reverses its direction.

Aluminum Filter—Various thicknesses of aluminum used as filtration in the x-ray beam to absorb the longer, ineffective rays. Usually 1-2-3 mm. thick.

Aluminum Step Wedge or Ladder—Graduated steps of the same thickness of aluminum which may be used to measure penetration of a given beam of x rays and the tonal scale, on film, of various qualities of x-ray beams.

Alveolar, *adj.*—A small depression or part of, (1) An alveolus (the socket of a tooth), (2) Air cell of the lungs, (3) A follicle of racemose gland.

Alveolar Cell Carcinoma—A form of lung carcinoma, also spoken of as pulmonary adenomatosis. This type of carcinoma is characterized by widespread foci throughout the lung fields. (See also bronchiolar carcinoma)

[1] Jacobson, Harold G., *et al.:* Agnogenic myeloid dysplasia. *Radiology, 72:5,* May 1959.

[2] Hinkel, C. L. and Moller, G. A.: Routine barium-gas examination of the duodenal bulb. *Am. J. Roentgenol. & Rad. Ther., 75:* 2, Feb. 1956.

[3] Hampton, A. O.: Safe method for roentgen demonstration of bleeding and duodenal ulcers. *Am. J. Roentgenol. & Rad. Ther., 38:*565, 570, 1937.

[4] Albers-Schönberg: (1) *Aers Verein Hamburg G., 11,* 1904. (2) *Fort. Roentg., 11,* 1915–16.

[5] Albright, F., Butler, A. M., Hampton, A. O., and Smith, P.: Syndrome characterized by osteitis fibrosa disseminata, areas of pigmentation and endocrine dysfunction with precocious puberty in females: Report of five cases. *New England J. Med., 216:*727–746, Apr. 29, 1937.

Alveolar Portion—The superior part of the body of the mandible (Pars Alveolaris) hollowed into numerous cavities for reception of teeth.

Alveolar Process—The bony projection of the maxillary bone which forms the hard palate with its mate.

Alveolodental, *adj.*—Pertaining to the portion of the alveolar process of the maxilla containing the teeth.

Alveolus, *pl. i, n.*—Terminal air sac of the lung; tooth socket.

A.M.A.—American Medical Association. The national organization of those doctors having an M.D. Degree.

Amebic Colitis—A chronic inflammatory disease of the colon caused by the amoeba, a small organism which frequently infects the colon particularly in the tropics.

Ameloblastoma, *n.*—An adamantinoblastoma. A malignant tumor arising from epithelial rests in the jaw.

American Board of Radiology—A.B.R. One of the specialty examining boards certifying specialists in radiology.

American College of Radiology—A.C.R. The governing body of organized radiology in the U.S.A.

American Journal of Roentgenology, Radium Therapy and Nuclear Medicine—The official publication of the American Roentgen Ray Society and of the American Radium Society. Abbr. Am. J. Roentgenol., Rad. Ther. & Nucl. Med.

American Radium Society—The exclusive society of radiologists specializing in Radium Therapy.

American Roentgen Ray Society—Organized March 26, 1900 in St. Louis, Missouri, under leadership of its first president, Dr. Heber Robarts.

Americium, *n.*—An artifically produced element, number 95, which is not found in nature. It has an atomic number of 95 and an atomic weight of approximately 241.

Amino Acid—One of the building blocks in forming the complex protein molecule.

Ammeter, *n.*—An instrument for the measurement of the quantity of an electric current.

Amniography, *n.*—Roentgenographic examination of the pregnant uterus after injection of opaque material into the amniotic cavity.

Amniotic Fluid—A fluid surrounding the embryo within the amniotic sac.

Amniotic Sac—A large membrane in the uterus enclosing the amniotic fluid and the embryo.

Amoeba, *pl. ae, n.*—A small unicellular organism which sometimes infects the colon.

Amorphous, *adj.*—Aplastic state of matter having no regular form; shapeless.

Amperage, *n.*—Amount of current of electricity measured in amperes.

Ampere, *n.*—The arbitary unit of measurement of quantity of an electric current; it is determined by the electrolytic deposit of certain definitely agreed amounts of silver from a solution of silver nitrate in one second. Abbr. Amp. Named for the French physicist Andre Marie Ampere.

Amphiarthrodial Joints—A form of articulation having little motion between the apposed surfaces of bones as between the vertebrae.

Amplification, *n.*—A gas or electronic process by which ionization effects can be magnified to a degree which may be measured.

Amplifier, *n.*—An appliance for increasing the volume of sound, the magnification of a microscope, or brightness of a fluoroscopic image. (cf. Image Amplifier).

Amplifilmer, *n.*—A trade name given to an amplified image fluoroscope by the Picker X-Ray Corporation.

Amplify, *v.*—To expand or enlarge, specifically spoken of the fluoroscopic image.

Amplifying Fluoroscope, *n.*—A fluoroscope equipped with an image intensifier (amplifier) tube.

Ampulla Phrenica—A normal enlargement at the lower end of esophagus as it enters the diaphragm at the hiatus.

Ampulla of Vater—Site of opening in second portion of duodenum of the pancreatic duct of Wirsung and the common bile duct.

Amyloid, (amyloidosis) *n.*—Starch-like; an abnormal protein substance deposited in various organs.

Anaphase, *n.*—One of the stages in nuclear division when the paired chromosomes take positions at the opposite poles of the dividing cell.

Anastomosis, *n.*—The surgical or pathologic formation of a passage between any two normally distinct spaces or organs.

Anatomical, *adj.*—Pertaining to the basic science dealing with normal morphology.

Anatomy, *n.*—The science which deals with the normal structure of the body.

Androgenic Tumor—A masculinizing tumor as of the adrenal gland.

Android Pelvis—A masculine type pelvis.

Androsterone, *n.*—An androgen excreted in the urine of both men and women. It is 3-transhydroxy-17-keto-androstene. When injected it counteracts the effects of castration.

Anemia, *n.*—Lack of normal hemoglobin content in the blood; deficiency of blood in quantity and quality.

Anencephaly, *n.*—Absence of the skull or brain.

Anesthesia, *n.*—Suspension of sensation in a part or organism.

Aneurysm, *n.*—An abnormal sacculation or outpouching of a blood vessel.

Aneurysmal, *adj.*—Of or pertaining to an aneurysm.

Aneurysmal Bone Cyst—Also spoken of as aneurysmal, giant-cell tumor because of its resemblance to it. It is a subperiosteal tumor which bulges periosteum, usually showing a rim of calcification.

Aneurysmal Dilatation, *n.*—Progressive enlargement of an aneurysm.

Angina Pectoris, *n.*—A condition produced by spasm of the nutrient (coronary) vessels of the heart, marked by paroxysmal thoracic pain and suffocation.

Angiocardiography, *n.*—Demonstration of the heart and great vessels of the thorax by means of injection of an opaque medium.

Angiofibroma, *n.*—Fibrous tissue in an angioma.

Angiogram, *n.*—X-ray visualization of blood vessels filled with radiopaque material.

Angiography, *n.*—Roentgenographic demonstration of blood vessels by use of an opaque material.

Angioma, *n.*—Blood vessel tumor.

Angiomatosis Cerebri—Multiple angiomas in the brain.

Angiomatosis, Encephalotrigeminal[1]—Multiple angiomata on the side of the brain corresponding to a port wine mark or nevus on the face or head. (Sturge-Weber-Dimitri Syndrome.)

Angiopneumography, *n.*—A combination of an angiogram and a pneumogram in which the blood vessels of a part have been opacified by an opaque medium and other spaces filled with air or gas.

Angligner, *n.*—Trade name for a specially designed protractor for use in skull roentgenography.

Angstrom, (abbr. Å) *n.*—One ten-thousandth of a micron (10^{-8} cm.), unit of length used for measuring wavelengths in the visible, ultraviolet and roentgen ray spectra. Named for the Swedish physicist Anders Jons Angstrom.

Angular, *adj.*—Sharply bent; having corners or angles.

Anion, *n.*—A negatively charged ion which goes to the positive pole or anode in an electrochemical solution.

Ankle, *n.*—The part of the leg just above the foot; also the joint between the foot and leg, the ankle joint.

Ankylosing Spondylitis—Calcification of the spinal ligaments occurring in Marie-Strümpell's arthritis. (Rheumatoid arthritis of the spine.)

Annihilation Radiation—This is the inverse of pair-production. Annihilation of a positron-electron pair results in the production of two photons.

Anulus, *n.*—A ring-shaped structure. Note: Spelling with one n taken from Nomina Anatomica.

Anulus Fibrosus, *n.*—The fibrocartilage between the vertebrae.

Anode, *n.*—Positive pole of an x-ray tube. In an ionized solution, it is the positive electrode toward which negative ions (anions) are attracted.

Anomaly, *pl.*, **Anomalies,** *n.*—An unusual anatomical variation in the development of a structure or organ.

Anorexia, *n.*—Loss of appetite.

Anoxia, *n.*—A condition of the tissues in which there is marked deprivation of oxygen supply.

Ante, *prefix*—Indicating before or going before in time or place.

Anterior, *n.*—The front of a part or structure. (Also antero.)

Antero, *prefix*—Indicating before or front. (Also anterior.)

Anteroposterior, *adj.*—From front to back direction with reference to the x-ray tube, abbreviated AP, and frequently used to designate path of x rays through a part being examined.

Anthraco-Silicosis, *n.*—A form of pneumoconiosis combining the effect of coal dust mixed with silica.

Anthracosis, *n.*—A form of pneumoconiosis produced by fine particles of coal dust.

Anthropoid Pelvis—Man-like.

Antibiotic, *n.*—Penicillin, streptomycin and terramycin are examples of antimicrobial substances occurring in nature.

Anti-Cathode, *n.*—The anode, or target, of an x-ray tube.

Antral, *adj.*—Referring to the antrum of the maxillary bone or the antrum of the stomach.

Antral Gastritis—Inflammatory changes, in the rugae of the antrum of the stomach.

Antrum, *n.*—One of the paranasal air sinuses located in the maxillary bones and draining into the nose, and also spoken of as the Antrum of Highmore. This term also refers to an anatomical division of the stomach, namely, that part just before the pylorus. Also Mastoid Antrum.

Anuria—No urine output.

Anus, *n.*—The external opening of the colon.

Anus, Imperforate—Failure of development of the normal external opening of the rectum.

Aorta, *n.*—The large artery which takes the blood away from the heart and is divided into the arch, the thoracic portion and the abdominal portion.

[1] Green, J. R.: Encephalotrigeminal angiomatosis. *J. Neuropath. & Exper. Neurol., 4:* 27–42, Jan. 1945.

Aortic Arch, *n.*—The first portion of the aorta curving from the right to the left side over the heart and forming a part of the thoracic aorta.

Aortic Insufficiency—A disease of the bicuspid valves of the aorta causing aortic regurgitation.

Aortic Knob, *n.*—That portion of the aortic arch which curves laterally as seen in the PA or AP projections, presenting a knob or knuckle as it joins the descending portion of the thoracic aorta.

Aortic Silhouette—The outline of the aorta as seen in the mediastinum contrasted, for the most part, against the air-containing lungs. This may be viewed in the PA, lateral and the right and left anterior oblique projections.

Aortic Stenosis, *n.*—A disease of the aortic valves preventing normal passage of the blood.

Aortic Valve, *n.*—A biscuspid valve within the aorta just beyond its origin from the heart normally preventing backward flow of blood propelled from the heart.

Aortic Window, *n.*—A radiolucent area seen below the curving arch of the thoracic aorta in the lateral view through which may be seen the right and left main bronchi and vascular roots of the lungs.

Aortitis, *n.*—Inflammation of the aorta.

Aortogram, Aortography, *n.*[1]—Roentgenographic visualization of the aorta and its branches by translumbar or suprasternal injection of an opaque medium.

Apertura Piriformis, *n.*—The nasal aperture.

Apex, *pl.*, *-es* or *-ices*, *n.*—The point of a pyramidal structure, the upper portion of the lung; the end of a root of a tooth.

Apical, *adj.*—Pertaining to apex, summit or extremity of anything.

Apical Abscess, *n.*—An abscess at the root of a tooth.

Apical Cap—Thickened pleura seen over the apex of the lung and regarded as a sign of inactive tuberculosis.

Apical Granuloma—Chronic inflammatory change at the root of a tooth.

Apical Infection—Term used in Dentistry to indicate infection of the apex of the root of a tooth.

Apical Lesion—An infiltrative or other disease process seen at apex of a lung, usually tuberculous.

Aplasia, *n.*—Signifies defective or incomplete development of tissues.

Apophyseal,[2] *adj.*—Pertaining to apophysis or secondary center of ossification; also the lateral articulating joints of the spine. (cf. zygapophyseal.)

Apophysis, *n.*—An outgrowth without an independent center of ossification.

Appendage, *n.*—A part appended to a main body such as the auricular appendage or appendix.

Appendiceal Liths—Concretions found in the lumen of the appendix which may be visualized on x-ray examination. (Also coproliths.)

Appendicitis, *n.*—Inflammation of the appendix vermiformis.

Appendix, *n.*—A small tubular appendage attached to the cecum near its junction with the small bowel.

Apposing, *adj.*—Facing or adjacent to. (cf. opposing.)

Apposition, *n.*—To bring two adjacent surfaces into contact; close proximity.

Aputrid Necrosis—A form of tissue death which is aseptic, as aseptic necrosis.

Aqueduct, *n.*—Any canal or conduit, e.g. Aqueduct Fallopii, or the facial canal; the aqueduct vestibuli, a canal running from the vestibule of the inner ear and opening on the posterior surface of the petrous portion of the temporal bone; and the aqueduct of Sylvius.

Aqueduct Stenosis—Partial or complete blockage of the aqueduct of Sylvius with production of internal hydrocephalus.

Aqueduct of Sylvius—A portion of the ventricular system of the brain connecting the third with the fourth ventricle.

Arachnodactyly (Arachnodactylia),[3,4] *n.*—A congenital disease marked by unusually long fingers, spoken of as "spider fingers," marked relaxation of ligaments leading to double-jointedness and frequently dislocated lens of the eye as well as cardiac lesions like aortic regurgitation. (See also Marfan's Disease.)

Arachnoid, *n.*—The middle fibrous layer of the meninges covering the brain.

Arachnoidal Granulations—Small, bulbous-like projections of the arachnoid membrane covering all blood vessels which project into the Pacchionian depressions or pits on the inner surface of the skull especially along either side of the sagittal sinus. (See also Pacchionian bodies and arachnoidal villi.)

Arachnoidal Villi—Fingerlike projections of small veins projecting into the subarachnoid spaces (Pacchionian bodies.)

Arachnoiditis, *n.*—Inflammatory changes in the arachnoid covering of the spinal cord and of the brain.

[1] Farinas, P. L.: Retrograde Abdominal aortography, *Am. J. Roentgenol. & Rad. Ther., 55:* 448, 1946.

[2] Etter, L. E. and Carabello, N. C.: Roentgen Anatomy of Oblique Views of the lumbar spine, *Amer. Jour. of Roentgenol. and Rad. Ther.*, 61: 699, 1949.

[3] Achard, C.: Arachnodactylie. *Bull. et mém. Soc. méd. d hop. de Paris 19:* 834–840, Oct. 1902.

[4] Etter, L. E., and Glover, L. Pellman: Arachnodactyly complicated by dislocated lens and death from rupture of dissecting aneurysm of aorta. *J.A.M.A. 123:* 2, 88–89, Sept. 43.

Arc Welder's Disease—A form of pneumonitis due to inhalation of nitrous fumes and resembling actual siderosis.

Arcelin, *n.*—AP position for x-ray examination of tips of the mastoid processes.

Arch, *n.*—A curved structure as the arch of the aorta.

Arcuate Eminence—The bowed prominence (eminentia arcuata) projecting from the superior margin of the petrous ridge above the semicircular canals.

Arcuate Veins—These are in the kidney and collect blood from the capillaries surrounding the tubules and unite to form a series of arches across the bases of the pyramids.

Arcuation, *n.*—A bending.

Area Monlor—A device for measuring radiation in a circumscribed locality.

Argentaffine Tumors—These are a type of carcinoid occurring most frequently in the lower ileum and appendix. They are slow growing but undergo malignant degeneration in about twenty-five per cent of the cases.

Argyro-Siderosis, *n.*—A form of pneumonoconiosis caused by inhalation of iron oxide mixed with silver. This is seen in arc-welders, silver polishers and workers in iron and steel factories.

Arm, *n.*—The portion of the upper extremity between the shoulder and the elbow. The forearm is between the elbow and the wrist.

Armature, *n.*—The revolving portion of a motor; a piece of iron placed across the two poles of a magnet.

Arnold-Chiari Deformity (Syndrome)[1,2]—Herniation of the cerebral tonsils into the spinal canal through the foramen magnum with pressure upon the fourth ventricle and often development of internal hydrocephalus.

Arrhythmia, *n.*—Any variation from normal rhythm of the heart beat.

A.R.R.S.—Abbreviation for American Roentgen Ray Society, which was organized March 26, 1900 in St. Louis, Missouri, under leadership of its first president, Dr. Heber Robarts.

Artefact (Artifact), *n.*—1. An unnatural structure or change due to manipulation, death or reagent, 2. A mark foreign to the image which is imposed on film by the action of x rays.

Arterial, *adj.*—Pertaining to the arterial system.

Arterial Occlusion—Obstruction of an artery as by an embolus or thrombus.

Arterio—A combining form for artery.

Arterioles, *n.*—Small subdivisions of arteries.

[1] Arnold, J.: Myelocyste, Transposition von Gewebskeimen and Sympodie. *Beitr. z. path. Anat. U. Z. allg. Path. 16:* 1–28, 1894.
[2] Chairl, H.: Ueber Veranderungen des Kleinhirns infolge von Hydrocephalie des grosshirns. *Deutsche med. Wchnschr. 17:* 1172–1175, 1891.

Arteriography, *n.*—Roentgenographic examination of arteries after the injection of opaque material.

Arteriosclerosis, *n.*—Calcium deposits in the walls of arteries; "hardening" of the arteries.

Arteriosclerotic Valvular—Pertaining to a combination of arteriosclerosis and valvular heart disease.

Arteriovenous Aneurysm—The rupture simultaneously of an artery and a vein in which the blood flows directly into a neighboring vein or else is carried into such a vein by a connecting sac.

Arteriovenous Angioma—A blood vessel tumor in which arteries and veins intermix.

Arteriovenous Fistula—A pathological communication between an artery and a vein usually secondary to trauma.

Artery, *pl. -ies, n.*—A blood vessel carrying oxygenated blood away from the heart to the peripheral structures of the body.

Arthritis, *n.*—Inflammation of a joint.

Arthritis Deformans, *n.*—A type of rheumatoid arthritis characterized by pronounced deformity.

Arthritis Psoriatica—A form of arthritis, usually rheumatoid, associated with the chronic skin disease psoriasis. (Also psoriatic arthritis.)

Arthritis, Pyo (Pyo-Arthritis)—Pus in a joint, or suppurative joint disease due to one of the pus producing micro-organisms.

Arthrodesis, *n.*—The surgical fixation of a joint; artificial ankylosis.

Arthrodesis Wood Screw—A metallic screw used for fastening bone grafts or plates. (See chart page 109.)

Arthrodesis Full Threaded Screw—A metal screw for fixing a joint. (See chart page 109.)

Arthrogram, *n.*—Radiographic examination of a joint after injection of contrast material.

Arthrokatadysis, *n.*—Otto pelvis which may be bilateral or unilateral with intrapelvic protrusion of the acetabulum frequently associated with chronic arthritis of the hip joint. Also Otto's disease.

Arthropathia Psoriatica, *n.*—A form of Rheumatoid Arthritis associated with Psoriasis.

Arthropathy, *n.*—Disease of a joint.

Articular, *adj.*—Pertaining to a joint.

Articular Cortex, *n.*—The end of a long bone over which the articular cartilage extends.

Articular Facets, *n.*—Small rounded surfaces for articulation.

Articular Processes, *n.*—Processes of bone (as of the vertebrae) bearing articular surfaces or facets.

Articulation, *n.*—Joint surface of a bone. Connection of one bone to another.

Artifact, (Artefact), *n.*—1. An unnatural structure or change due to manipulation, death, or reagents, 2. A mark, the image of which is imposed on film by the action of x rays.

Arytenoid, *n.*—A muscle and cartilage comprising part of the structure of the larynx.

Asbestosis, *n.*—A form of pneumoconiosis caused by inhalation of fine particles of asbestos.

Ascaris Lumbricoides, *n.*—The round worm infesting the intestinal tract.

Ascending, *adj.*—Rising upward, as the ascending colon.

Ascending Colon, *n.*—The portion of the colon extending from the cecum, at its connection with the small bowel, to the hepatic flexure where it turns.

Aschoff - Rokitansky Sinuses[1,2] — Congenital spaces seen around the gallbladder in cholecystography and usually associated with chronic inflammatory disease. (Diverticulosis of the gallbladder.)

Ascites, *n.*—A collection of serous fluid in the peritoneal cavity.

Aseptic, *n,*—Free from putrefactive matter; free from pathogenic micro-organisms.

Aspect, *n.*—In Anatomy, the side of an object from a particular direction as the posterior aspect.

Aspergillosis, Pulmonary—A form of fungus disease of the lung caused by the aspergillus fungus.

Aspiration, *n.*—Withdrawing fluid from a cavity through a needle inserted through the overlying structures, or by means of a tube passed into the stomach

Assimilation Sacrum—One having six segments, the last lumbar vertebra being transitional in character and having the appearance of a sacral segment. Also a sacrum which appears to consist of but four segments, the first sacral segment appearing free and having the characteristics of a lumbar vertebra.

Asterion, *n.*—An anatomical point on the surface of the skull at the junction of the parietal, mastoid, lambdoid, and occipito-mastoid sutures.

Asthenic, *adj.*—The habitus of an individual who lacks normal tone.

Asthma, *n.*—A spasmodic condition of the respiratory tract causing extreme expiratory difficulty.

Astragalus (Talus), *n.*—A tarsal bone which forms the ankle joint with the tibia and fibula.

Astroblastoma, *n.*—A brain tumor composed of astroblasts.

Astrocytoma, *n.*—A nerve tissue tumor composed of astrocytes.

[1] Aschoff, L.: *Bemerkungen zur pathologischen Anatomie der Cholelithiasis und Cholecystitis.*
[2] Rokitansy, C.: *A Manual of Pathological Anatomy,* Philadelphia, 1885, Blanchard & Lea, ii, 130.

Asymmetry, *n.*—Lack of symmetry of parts or organs on opposite sides of the body.

Asymptomatic, *n.*—Lacking in symptoms, having no symptoms or complaints.

Atelectasis, *n.*—Devoid of air, as atelectasis of the lungs from failure of expansion.

Atelectatic, *adj.*—Pertaining to atelectasis.

Atheromatous, *adj.*—Fatty degeneration of the walls of blood vessels usually at the site of the lesions of arteritis deformans.

Atherosclerosis, *n.*—Referring to calcified fatty deposits in the walls of blood vessels.

Atlantal, *adj.*—Of or pertaining to the atlas.

Atlanto—Combining form for atlas.

Atlanto-Axial Subluxation—A developmental condition in which the vertebral body of C-1 is displaced anteriorly with the odontoid process of the axis resting upon the neural arch of C-1 associated with a rotary dislocation. Such a child usually has opisthotonos.

Atlanto-Occipital—Pertaining to the joint between the atlas and the occipital bone.

Atlanto-Odontoid—Pertaining to the joint formed between the dens of the axis and the atlas.

Atlas, *n.*—The first cervical vertebra which articulates with the articular condyles of the occipital bone, and the dens of the axis.

Atom, *n.*—The smallest unit of chemical element.

Atomic, *adj.*—Of or pertaining to an atom.

Atomic Energy Commission—Established by act of Congress called Atomic Energy Act of 1946 (60 Stat. 755) and amended by the Atomic Energy Act of 1954 (68 Stat. 919: 42 U. S. C. 1801 et seq.)

Atomic Number, Symbol Z—The number assigned to an element in the periodic table, depending upon the number of electrons revolving about the nucleus.

Atomic Weight—The weight of an atom, the unit being one sixteenth of the weight of the common oxygen atom. It is possible for two different elements (with neighboring atomic numbers) to have the same atomic weight; in that case they are called isobars.

Atresia, *n.*—Narrowing of an opening of a passage or tube, or congenital absence of such an opening.

Atrial, *adj.*—Referring to the atria, or auricles of the heart.

Atrial Septal Defect—A hole, such as the foramen ovale, in the septum dividing the right and left atria of the heart.

Atrial Ventricular Septum—A partition dividing an atria from a ventricle as in the heart. Also, atrio-Ventricular.

Atrium,-a (Auricle) *n.*—One of the chambers in the upper portion of the heart, especially the main portion of an auricle.

Atrophic, *adj.*—wasted.

Atrophic Arthritis, (Rheumatoid Arthritis)—One followed by a wasting away due to lack of nutrition.

Atrophic Gastritis—A form of inflammatory changes in the lining of the stomach where the gastric rugae are flat and smooth.

Atrophy, *n.*—Wasting away of a tissue or part.

Atropine Sulphate—A drug used as a respiratory and circulatory stimulant.

Atropinization, *n.*—A process of medicating with atropine sulphate.

Atypical, *adj.*—Not typical; of unusual type.

Auditory Meatus, External—The opening of the external ear.

Auditory Meatus, Internal—The opening to the internal ear in the petrous bone for the 8th cranial nerve.

Auerbach's Plexus—The myenteric plexus of sympathetic nerves distributed via numerous ganglia in the intestine.

Aura, *n.*—The pre-epileptic phenomenon in which the patient undergoes various sensations such as noise in the ears, flashes of light, dizziness etc.

Auricle, *n.*—1. The external ear or pinna, 2. One of the two smaller and upper chambers of the heart.

Auricle of the Ear—The cartilaginous flap of the ear, the pinna.

Auricle of the Heart—Right and left chambers (atria) of the heart which receive blood from the general body and from the pulmonary circulation.

Auricular, *adj.*—Pertaining to the ear or to an auricle of the heart.

Auricular Appendage—A small portion of the left atrium projecting laterally and slightly posteriorly.

Austin Moore—Hip prosthesis. (See chart page 108.)

Austin Moore—Nail (hip). (See chart page 108.)

Auto, *prefix*—Indicating self.

Automatic Exposure Switch—A device for presetting exposures as x times per second in serial angiography.

Autonephrectomy, *n.*—Loss of the function of a kidney through a destructive disease process.

Autoradiograph, *n.*—Record of the structure of an object made on film by the object's own radioactivity.

Autotransformer, *n.*—A piece of electrical apparatus consisting of a single coil of wire wound about a core of iron, connected across an alternating current circuit, with taps taken off the coil at regular intervals connected to buttons which are conveniently arranged so that more or less of the coil can be subtended in a secondary circuit. The purpose of this is to maintain the voltage over wide variations of amperage up to the capacity of the generator.

A-V Fistula—Abnormal communications between veins and arteries described as arteriovenous fistulae. These are of congenital, traumatic and surgical type.

Avalanche, *n.*—A cumulative increase of ions which is also known as "Townsend avalanche" or "Townsend ionization."

Avascular, *adj.*—Not vascular, pertaining to blood vessels.

Average Life (Mean Life)—In any particular radioactive substance, the average of the individual lives of the atoms.

Avitaminosis, *n.*—Disease due to lack of vitamins.

Avogadro's Number or Constant—The number of molecules in a mole, or gram-molecular weight of any substance, e.g., oxygen is 32 grams.

A-V Malformation—An arterio-venous fistula.

Avulsion, *n.*—The tearing away of a part.

Axial, *adj.*—Of or pertaining to the central part of a body or structure. Also, spoken of the axial or central portion of a beam of x rays. A central line passing through the equator of a sphere, between its poles, about which a body may revolve. In anatomy, spoken of the spinal column and of the central portion of the body including the head as distinguished from the extremities.

Axial View—Usually spoken of the vertico-submental or submento-vertical view of the base of the skull.

Axilla, *n.*—Arm pit.

Axillary Nodes—Lymphatic glands found in the arm pit which are commonly the site of metastases from breast cancer.

Axis, *n.* The epistropheus or second cervical vertebra.

Ayerza's Disease—One characterized by dyspnea, chronic cyanosis, erythema, enlargement of spleen and liver and hyperplasia of bone. There is also sclerosis of pulmonary vessels.

Azygos, *n.*—Unpaired; as azygos "lobe" of the lung; an anomalous septation[1] of the upper portion of the right lung caused by persistence of the azygos vein from fetal life.

Azygos Septum—[1]A septum composed of four layers of pleura namely, two parietal and two visceral layers forming a division of the right upper lobe spoken of incorrectly as an "azygos lobe" because it is not a true lobe of the lung. The anomaly is one of septation rather than of lobation.[2]

[1] Etter, L. E.: Variations in the position of the azygos septum and its incidence in fifty thousand roentgen examinations. *Am. J. Roentgenol. & Rad. Ther., 58*:6, 726–729, Dec. 1947.

[2] Meschan, Isadore: Roentgen Signs in Clinical Diagnosis. W. B. Saunders, 1956, p. 485.

B

Ba—Chemical symbol for barium.

Babinski Reflex—Dorsal flexion of the great toe on stroking sole of foot.

Bacillary Colitis—A form of inflammation of the large bowel caused by bacilli such as typhoid or other gram-negative organisms like B. Coli.

Bacillus, *n.*—A rod-like microscopic organism.

Backflow, *n.*—Extravasation of opaque medium into the parenchyma of the kidneys during retrograde urography. This is of several varieties as: Pyelotubular, pyelovenous, pyelolymphatic and pyeloparenchymal.

Background, *n.*—A random frequency radiation arising from cosmic and other rays not being produced by machines or radioactive materials in the immediate vicinity.

Background Counting Rate—Radiation arising from cosmic rays and radioactive material in the vicinity, and also from any radioactive contamination of the materials of which the counting instrument is made.

Backscattering, *n.*—Radiation which is scattered or reflected backward when the primary beam strikes an object.

Bacterial Endocarditis—Inflammation of the inner lining of the heart and cardiac valves as in rheumatic fever.

Bagassosis, *n.*—A nonspecific type of bronchopneumonia developing from inhalation of bagasse dust which arises from sugar cane after the sugar has been extracted. There is some question whether bagassosis is due to fungus, allergic reaction of the pulmonary tissue or is a pneumonoconiosis.

Ball and Socket Joint—An enarthrosis or a joint in which a rounded head or ball fits into a cup or socket such as in the hip joint.

Ballistic Milliampere Meter—A meter designed to read in milliampere seconds; used for measuring extremely short exposures (less than one second) where a high milliamperage is necessary; for instance in radiographic work, exposures of less than one second, with 100 ma. or more.

Ballooning, *n.*—Expansion or blowing up of a part as in progressive cystic changes in the lung.

Bamboo Deformity—Spoken of the bamboo appearance of the spine in advanced rheumatoid arthritis of the Marie-Strümpell variety.

Bandage, *n.*—A dressing applied to a part which may be visible on the roentgenogram.

Bands of Density—Linear shadows of increased density as in the lung field or in bone.

Bang's Disease—A contagious disease of pregnant cows causing abortion and transmissible to man as Undulant Fever. (See also Brucellosis.)

Banti's Disease—A primary disease of the spleen associated with enlargement of this organ, anemia and, in later stages, of cirrhosis of the liver.

Baridol, *n.*—A proprietary name for special barium preparation.

Barium Enema (B.E.)—The rectal injection of a mixture of barium and water for roentgen visualization of the large bowel.

Barium Meal—Test meal or motor meal, with the addition of barium sulphate used to visualize the gastrointestinal tract. (See also G.I. Series.)

Barium Platinocyanide—A chemical substance formerly used in the manufacture of fluorescent screens, and the substance first used by Roentgen for this purpose.

Barium Sulphate—The principal ingredient of opacifying mixtures for delineation of hollow viscera such as the stomach and intestine.

Barium Swallow—Thick barium mixture swallowed to opacify the esophagus in order to identify cardiac chamber enlargement by evidence of displacement or pressure upon it.

Barium-Water Mixture—Water and barium sulphate mixed in varying proportions as opaque medium for x-ray examination of the upper G.I. Tract or for barium enema.

Barlow's Disease—Vitamin C deficiency causing scurvy, specifically in infancy.

Barn, *n.*—A unit of area for stating nuclear cross-section. One barn equals 10^{-24} cm.^{2}.

Barotrast, *n.*—Proprietary name for a special barium preparation used in barium enemas.

Barotrauma, *n.*—An injury to the eustachian tube or tympanic membrane from differences in air pressure between that of the atmosphere and the intratympanic cavity.

Barrel Chest—Spoken of a thorax with a large antero-posterior diameter, such as is seen in emphysema.

Basal, *adj.*—Referring to the lower portion or portions of the lung fields or to a projection of the skull showing the features of the base.

Basal Angle—The sphenoid angle or one between the sphenoid bone and the clivus. This is normally about 150 degrees.

Basal Cell Carcinoma—A form of epithelioma of the skin which arises from the basal cell layer of the dermis. This tumor is locally malignant but does not metastasize.

Basal Ganglia[1]—Symmetrical nuclei at base of the brain showing occasionally as bilateral calcifications in skull x-ray examinations.

[1] Palubinskas, A. J. and Davies, Hugh: Calcification of the basal ganglia of the brain. *Am. J. Roentgenol. & Rad. Ther. & Nuc. Med., 82: 5.* 806–821, Nov. 1959.

Basalis, *n.*—Referring to the base of the skull.

Base, *n.*—Referring to the bottom or lower portion as the base or bases of the lungs, heart and/or of the skull.

Basedow's Disease—Hyperthyroidism, exophthalmic or toxic goiter.

Basilar, *adj.*—Pertaining to or situated at the base.

Basilar Artery—The artery formed at the base of the brain posteriorly.

Basilar Impression—Partial invagination of the base of the cranium at the foramen magnum by the cervical vertebrae. Also spoken of as Platybasia.

Basion, *n.*—An anatomical point at the anterior margin of the foramen magnum.

Basolac, *n.*—A proprietary opaque medium containing barium and lactose.

Basophil, *n.*—Cells of the pituitary gland or some of the white blood cells having the ability to take a basic stain.

Basophilic, *adj.*—Referring to cells having an affinity for aniline or base stains.

Basophilism, *n.*—A disease of the pituitary gland caused by a tumor (basophilic adenoma) containing basophilic cells and producing certain characteristic changes such as elephant hump and moon facies grouped together under the term Cushing's Disease.

Bathrocephaly, *n.*—A skull having a deep groove between the occipital and parietal bones giving the appearance of depressed fracture in the lateral radiograph.

Battery, *n.*—(Electric). A collection of electric cells. They may be connected in series, multiple or parallel circuits.

"BB" Shot, or Bird Shot—Small lead pellets occasionally seen embedded in tissues on x-ray examinations.

Be—Chemical symbol for Beryllium.

Beading, *n.*—Nodular thickening of lung markings seen in pulmonary tuberculosis and in peribronchial fibrosis. Also seen in rib ends in rickets.

Beam, *n.*—Stream of x rays of heterogenous quality emanating from the target of an x-ray tube.

Beaten Silver Appearance—Digital markings or impressions from the convolutions of the brain on the inner table of the skull.

Bechterew's Disease[1]—A form of calcification of the paraspinous ligaments associated with long standing fibrositis, and beginning in the cervical region and progressing downward, contrary to Marie-Strümpell type of arthritis which begins in the sacroiliac joints and progresses upward.

Bechterew's Mendel—A reflex indicating a lesion of the pyramidal tract, and manifested when the cuboid bone is tipped causing flexion of four outer toes.

Bechterew's Reflex—Contraction of facial muscles due to irritation of nasal mucosa. Dilatation of pupil on exposure to light. Contraction of lower abdominal muscles when skin of inner surface of thigh is stroked.

Bechterew's Spondylitis—Arthritis of the spine resulting in complete ankylosis, progressing from above downward in contrast to Marie-Strümpell variety which progresses in opposite direction.

Becquerel Rays—The rays emitted from uranium compounds. (Gamma Rays) Named for Antoine Henri Becquerel, French physicist.

Becquerel's Burn—Skin burn sustained by the physicist when he kept radioactive compound in close body contact too long.

Bedside, *adj.*—Spoken of an examination made by use of the mobile x-ray machine at the patient's bedside. Not to be confused with portable examination which indicates one made by means of an x-ray machine that can be picked up and carried to the patient's bedside.

Benign, *adj.*—Innocent; not malignant.

Benign Hyperostosis—Thickening of the inner table of the frontal bone or of other bones of the skull (See also hyperostosis frontalis interna.)

Benign Tumor—One which does not metastasize.

Bennet's Fracture—A fracture of the proximal end of the metacarpal bone of the thumb.

Benoist Penetrometer—A circular metallic ladder of different thicknesses of aluminum, from 1 to 10 mm., conveniently arranged so that densities cast by varying thicknesses of the aluminum can be compared to that cast by a thin central disc of silver. Used to judge the relative penetration of the x-ray beam.

Benzidine, *n.*—A chemical test for blood, as in the urine.

Bergonie—Tribondeau Law—Radiosensitivity of cells varies directly with their reproductive capacity and inversely with their degree of differentiation.

Beriberi Heart Disease—Changes in the shape of the heart seen in Vitamin B deficiency.

Berylliosis, *n.* A form of pneumonoconiosis caused by inhalation of beryllium.

Beryllium, *n.*—A light metallic element, with atomic number of 4 and atomic weight of 9.02.

Beryllium Granulomatosis—A form of pneumoconiosis caused by inhalation of beryllium.

Beryllium Window—A beryllium glass enclosure

[1] Bechterew, (Bechterev, Bekhtereff) Vladimir Michailovich: Ankylosis of the spine with curvature as a special form of disease. *Vrach. 13:* 899–903, 1892, and *Neurol. Centralbl. 12:* 426–34, 1893.

of the x-ray tube through which the rays pass to the outside.

Beta Particle—Electron emitted from the nucleus during radioactive disintegration. It has more penetrating power than the alpha particle.

Beta Rays—Negatively charged electrons spontaneously emitted by radioactive substances in their natural process of decay. Abbr. B rays.

Betatron, *n.*—A machine for producing high speed electrons through magnetic induction.

Bev. (*Abbr.*)—Billion electron-volts.

Bezoar, *n.*—Foreign body in stomach formed by indigestible food, hair or other material (cf. phonetically, bizarre and bazaar.)

Bezold's Abscess—A subperiosteal abscess found in the temporal bone.

Bi—*Prefix*, meaning two, double or twice.

Bicipital, *adj.*—Pertaining to a biceps muscle. Having two heads; one tendon of biceps attached to coracoid process of scapula and the other to the clavicle.

Bicipital Tuberosity—A rounded prominence on the neck of the radius for attachment of the biceps tendon.

Biconcave, *adj.*—Concave on each side, as a lens.

Biconcavities—Hollowed surfaces with curves, bow-like on each, as biconcave vertebral bodies. (Butterfly vertebrae.)

Bicornate, *adj.*—Having two horns, as the uterus.

Bicuspid, *n.*—Upper and lower teeth located between the cuspids and molars, each having two cusps.

Bifid, *adj.*—Cleft or split into two parts or forked, as a rib, or as in urology, where the kidney pelvis has two prongs or segments.

Bifurcate, *v.*—To branch or divide.

Bifurcation, *n.*—Division into two branches. The site of a branch or division into two branches.

Bilateral, *adj.*—On both sides.

Bilateral Thinning—A congenital anomaly of the parietal bones in which there is unusual thinning on each side of the vertex extending over the convex surface of the skull.

Bile, *n.*—The secretion from the liver, carried to the intestine by the bile ducts.

Bile Ducts, *n.*—The tubes which collect the bile and convey it to the gallbladder and intestine.

Bilevac, *n.*—A proprietary name given to a substance ingested to cause evacuation of the gallbladder and intestine.

Bilharziasis, *n.*—A disease caused by Bilharzia, a genus of blood flukes now known as Schistosoma.

Bili, *prefix* or combining form, meaning bile.

Biliary, *adj.*—Pertaining to the bile; conveying the bile; calculi, (stones).

Biliary Ducts—The tabular structures carrying the bile from the liver and from the gallbladder, forming a common bile duct which empties into the intestine.

Biliary Radicles—The same as the biliary ducts, resembling the root system of a tree combining to form the trunk at the hepatic duct.

Bilic, *adj.*—Relating to bile.

Biligrafin, *n.*—A proprietary name of a compound used for gallbladder visualization.

Billroth, *n.*—The name of a German surgeon who devised various operations on the stomach.

Bimalleolar Fracture—A fracture of the ankle involving both the internal and external malleoli.

Binary Scalar—An electronic device with a scaling factor of two per stage.

Binding Energy—The energy equivalent to the difference between the weight of the nucleus as it exists and the sum of weights of the particles it comprises.

Biologic Effectiveness of Radiation—Ratio of x or gamma rays dose to that required to produce the same biologic effect by the radiation in question.

Biological Half-Life—Time required for radioactivity in an organism to diminish to half its original value by excretion and radioactive decay working together.

Biophysics, *n.*—The science which deals with the physical processes of living tissues.

Biopsy, *n.*—A surgical procedure involving removal of a small particle of tissue from a living subject for microscopic examination.

Bipartite, *adj.*—Having two parts or divisions, as in the patella, or navicular bones. (See also tripartite.)

Bishop's Cap—Name for the duodenal bulb or cap.

Bismuth Poisoning—A form of heavy metal poisoning with demonstrable x-ray changes in the bones.

Bite-Wing—An intra-oral film placed between occlusal surfaces of the teeth for survey x-ray examination.

Bizarre, *adj.*—Of odd or irregular shape as the duodenal bulb in chronic ulcer, (cf. phonetically, with bazaar and bezoar.)

Bladder, Gall—The sac-like receptacle for the bile.

Bladder, Urinary—The distendable muscular pouch or sac which serves as a reservoir for urine poured into it from the ureters.

Blade, *n.*—The shoulder "blade" or scapula.

Blast Injury—Traumatic changes in internal organs such as the lungs, liver, and spleen resulting from external compression and decompression.

Blastomycosis, *n.*—A fungus infection which may affect the lungs producing a fine, granular

appearance similar to that of miliary tuberculosis.

Bleb, *n.*—A small air cyst or blister.

Blisters, *n.*—Rounded raised areas on any surface; in photography, raised areas on the surface of the film due to separation of the photographic emulsion from the basic celluloid sheet.

Block Vertebrae—A congenital defect where two or more vertebral bodies are joined without an intervening disc or cartilage. This deformity is frequently associated with the Klippel-Feil Syndrome.

Blood Dyscrasias—Diseases of the blood of particular interest to radiologists such as sickle cell anemia where there are roentgen demonstrable changes in the bones.

Blount Plate—A form of bone plate. (See chart page 108.)

Blount's Disease—Osteochondritis of the medial tibial condyle.

Bochdalek, Foramen of—The hiatus pleuroperitonealis situated in the posterior portion of the diaphragm. This is an infrequent site for diaphragmatic hernia.

Body, *n.*—Main portion of the entire organism, as the trunk, distinguished from the extremities or head.

Body Section Radiography—A special technique in roentgenography in which various planes of the body can be brought into focus, and is variously described as planigraphy, laminagraphy, tomography, sectional radiography, plane radiography, differential and layer radiography.

Body of Vertebra—The heavy spongy portion of the vertebra which forms the main support of the spine. Body of a vertebra, for example, is the main portion without the processes.

Boeck's Sarcoid,[1] **(Sarcoidosis)**—Multiple benign lesions of a superficial nature, especially on arms, face or shoulders. Also a chronic nontuberculous infiltration of the lungs histologically showing typical giant cells.

Boehler's Angle[2]—An angle of 35°–40° formed posteriorly at the intersection of a line drawn from the posterior superior margin of the talocalcaneal joint through the posterior margin of the calcaneus, with another line drawn from the posterior superior articular margin of the calcaneo-cuboidal joint. Less than 28° is evidence of poor alignment of fragments in fracture of the calcaneus.

Boehler's Nail—For nailing bone fractures. (See chart page 108.)

Bolus, *n.*—A rounded mass of anything; a large pill for a horse.

[1] Boeck, Caesar Peter Moeller: *Norsk. Mag. f. Laegevidensk,* 4r *14:* 1321–34, 1899 and *J. Cutan. & Gen.-Urin. Dis. 17:* 543–50, 1899.
[2] Boehler, L.: *J. Bone and Joint Surg. 13:* 75 1931.

Bone Absorption—Evidence of demineralization of bone manifested by increased radiability.

Bone Age[3]—The degree of maturation of growth of bones as shown by comparison of epiphyses with tabulated standard.

Bone Erosion—Evidence of beginning destruction as of the surface of a bone.

Bone Graft—An operative procedure where a piece of living bone is spliced into another one as at the site of fracture.

Bone Marrow—Filling of the marrow cavity of bones.

Bones, *n.*—Long bones found in the extremities. Short bones of hands and feet. Flat bones of the skull. Irregular bones, such as vertebrae. Sesamoid, small rounded bones found in the tendons.

Bone Seeker—An ion or compound migrating in the body, having an affinity for bone e.g. Strontium^{90} (Sr^{90}).

Bony Thorax—Ribs, sternum, clavicles, shoulder girdles and thoracic vertebral column.

Borderline, *adj.*[4]—A tenuous or twilight zone between the normal and the pathological which may, at times, be difficult to determine. Also spoken of a borderline pelvis, that is, one in which there is some doubt that the measurements will allow sufficient latitude for a normal delivery.

Boron Counter Tube—One filled with boron trifluoride (BF_3) with its electrodes coated with boron or its compounds.

Bosworth Acromioclavicular screw—A metal screw used in orthopedic surgery. (See chart page 109.)

Bosworth Spline (Femur)—A bone plate. (See chart page 108.)

Bosworth Spline (Shoulder)—A bone plate. (See chart page 108.)

Bourneville's Disease—The manifestation in the brain of tuberous sclerosis.

Bowel, *n.*—The large and small intestines.

Bowman's Capsule—A globular dilatation at the origin of the urine collecting tubules in the kidney.

Brachial, *adj.*—Two large deep veins and arteries of upper arm; also a plexus of nerves.

Brachycephalic, *adj.*—Brachycephalous, having a head disproportionately short; a round head.

Brachycephaly, *n.*—Unusually short skull; one having a short AP diameter.

Brachytherapy, *n.*—Short or interstitial treatment, e.g. Co^{60} Brachytherapy. (cf. Teletherapy)

[3] Greulich, W. W., Pyle, S. I., Todd, T. W. Wingate: *Radiographic Atlas of Skeletal Development of the Hand and Wrist.* Palo Alto, Stanford University Press, 1950.
[4] Köhler, Alban: *Röntgenology: Borderlands of the Normal and Early Pathological in the Skiagram.* New York, William Wood & Co., 1931.

Brain, *n.*—The cerebrum or most central part of the nervous system comprised principally of the two cerebral hemispheres and the cerebellum and located within the cranium.

Brain Metastases—Secondary tumor growths within the brain—e.g. of bronchiogenic or breast carcinoma.

Branchial Cleft Cyst—A cyst, usually in the neck, representing a remnant of embryonic gill clefts in the developing fetus.

Breast Shadows—Soft tissue shadows of the male or female breast which may be superimposed upon the roentgenogram of the chest.

Breech Presentation—Presentation of the fetus by its caudal end and also spoken of as frank and footling presentations.

Breeder, *n.*—A converter producing more fissionable atoms than it consumes.

Bregma, *n.*—A topographic point on the skull at the junction of the coronal with the sagittal suture and the site of the metopic fontanelle.

Bremsstrahlung, *n.*—(German) Deceleration of charged particles as they pass through matter producing secondary photon radiation.

Breschet, *n.*—The canals or veins of Breschet seen within the diploë and inner table of the skull.

Brodie's Abscess—A small indolent abscess in bone and also spoken of as Brodie's Disease.

Bronchi, *n.*—The main subdivisions of the trachea.

Bronchial, *adj.*—Referring to a bronchus or bronchi.

Bronchial Stenosis—Closure or narrowing of a bronchus.

Bronchial Tree—The main stem bronchi and their branches.

Bronchiectasis, *n.*—A condition in which there is prominent saccular or tubular dilatation of the bronchi.

Bronchiogenic, *adj.*—Having origin from a bronchial structure.

Bronchiogenic Carcinoma—An epithelial cell new growth, or malignant tumor enclosed in connective tissue, and tending to infiltrate and give rise to metastases, having origin in the bronchi.

Bronchiolar Carcinoma—A form of cancer of the lung in which it is uncertain from which cells it is derived. One view is that it originates from epithelium of an acinus or alveolus; the other that it arises from the terminal portion of a bronchiole. (See also Terminal Bronchiolar Carcinoma and Alveolar Cell Carcinoma).

Bronchioles, *pl., n.*—The smaller subdivisions of the bronchi.

Bronchioli, *n.*—The smaller subdivisions of the bronchi.

Bronchiolitis, *n.*—A form of bronchopneumonia. *Inflammation of the bronchioli.*

Bronchiolitis Fibrosa Obliterans—An acute inflammatory disease of the lungs characterized by fine granular shadows.

Bronchitis, *n.*—Inflammation of the air tubes which supply the lungs.

Broncho, *prefix*—Referring to the connection between a bronchus and the pleural cavity as in a bronchopleural fistula.

Bronchogram, *n.*—Radiograph of the chest following instillation of opaque medium into the bronchi.

Bronchography, *n.*—Roentgenographic examination of the chest after intratracheal injection of opaque medium.

Broncholith, *n.*—Stone in a bronchus. Associated with "stone asthma."

Broncholithiasis, *n.*—A condition in which stones are found in the bronchi. "Stone Asthma."

Bronchopleural Fistula—A pathological connection between a bronchus and the pleural cavity.

Bronchopneumonia, *n.*—A form of pneumonia, frequently complicating measles, characterized by peribronchial exudative changes.

Bronchopulmonary, *n.*—The bronchi and adjacent lung tissues.

Bronchopulmonary Segment—A subdivision of the lung served by a branch of the bronchial tree.

Bronchospasm, *n.*—Paroxysmal contriction of a bronchus caused by a contraction of its circular muscle fibers.

Bronchostenosis, *n.*—Narrowing or constriction of a bronchus.

Bronchovascular, *adj.*—Pertaining to bronchi and blood vessels.

Bronchus, *pl. -i, n.*—Air tube or tubes which supply the lungs.

Brown Corrugated Fasteners—For holding fractured bone ends. (See chart page 109.)

Brucellosis, *n.*—Infection with brucella abortus (Undulant Fever.) Named for Sir David Bruce who discovered B. melitensis as the cause of Malta Fever.

Brush Discharge—The bluish discharge which takes place into the air from a high tension wire.

Buccal, *adj.*—Pertaining to the inside of the cheeks forming the buccal (oral) cavity.

Bucky Diaphragm[1]—Invented in 1909 by Dr. Gustav Bucky. It is an ingenious piece of

[1] Bucky, G.: Ueber ein neues Blendenverfahren bei Röntgen-durchleuchtungen, *Med. Klinik, 43*:9745, 1912.
idem.: Ueber die Ausschaltung der im Objekt entstehenden Sekundaerstrahlen bei Röntgenaufnahmen. IX Röntgen Kongress, 1913, p. 30.
idem.: A grating diaphragm to cut off secondary rays from the object. *Arch. of Röntgen Ray, 18*:6–9, 1913.
idem.: Moyen d'eliminer le rayons secondaires produits dans l'objet radiographie. *Arch. D'Electr. Med., 24*: 92–95, 1914.

roentgenographic apparatus consisting of a grid of parallel strips of lead arranged on the radius of curvature of a cylinder whose center is at the focal spot of the x-ray tube. The purpose of this is to reduce the effects of scattered radiation.

Bucky, Dr. Gustav—The inventor of the Bucky diaphragm in 1909.

Bucky Film—From Dr. Bucky, the inventor. A radiograph made usually at 36 to 40 inch distance with interposition of the Bucky Diaphragm or grid.

Bucky's Rays[1,2]—Grenz Rays, so-named by Dr. Gustav Bucky in 1929 because they are borderline x rays generated at 5–15 KV and have a wave length of about 2 angstroms.

Bucky Table—A radiographic table equipped with Bucky tray and grid.

Bucky Tray—The sliding metal tray beneath the table top and grid for placing a cassette in place beneath the part to be examined.

Bucky Wallstand—Vertical apparatus usually fastened to a wall for making upright chest and skull x-ray examinations.

[1] Bucky, G.: *Grenz-Ray Therapy*, New York, The MacMillan Co., 1929.
[2] Bucky, Gustav and Combes, Frank C.: *Grenz Ray Therapy*, 1954, Springer Pub. Co., N.Y.C.

Bulbous, *adj.*—Expanding into a bulb-like structure.

Bulla, *pl.* *-ae*, *n.*—Large blister or cyst filled with fluid or air.

Bullous Emphysema—Disease of the lungs manifested by large cystic dilatations of the parenchymal tissues.

"Bumper" Fracture—A compression fracture of the upper end of the tibia caused by impact of an automobile bumper to the lateral side of the knee.

Bunion, *n.*—Thickening of the bursa on the medial side of the great toes.

Burr Hole—Generally, a trephine opening in the skull.

Bursa, *n.*—A small pouch-like sac overlying bony prominences or tendons to prevent friction in movement of the parts.

Bursitis, *n.*—Inflammation of a bursa.

Bursting Fracture—A comminuted fracture of bone in which the fragments are separated as in the skull from a bullet.

Butterfly Vertebrae—Ones having the appearance of a butterfly due to notching above and below by enlarged nuclei pulposi.

Buttock, *n.*—The large rounded gluteal prominence.

C

Ca—Chemical symbol for calcium. Also abbreviation for cancer or carcinoma.

Caffey's Disease—(Infantile cortical hyperostosis) A condition in which there appears within the first three months of life a cortical hyperostitis. Local painful swellings of the soft parts and of the long bones involved occur, usually undergoing spontaneous regression by the age of one.[1] (cf Hypervitaminosis A.)

"Caked" Kidney—A form of renal fusion which is almost complete with fusion of both the upper and lower poles of the kidney forming a ring-like mass smaller than the size of two separate kidneys and situated in front of the sacrum. This is also spoken of as "shield-shaped" or "disc shaped" by the English. The Germans refer to it as "Kuchenniere."

Calcaneal, *adj.*—Pertaining to the calcaneus or heel bone.

Calcaneocuboid Joint—The joint between the calcaneus and the cuboid bone in the tarsus or foot.

Calcaneus, *n.*—Os calcis or heel bone.

Calcarea, *n.*—Lime or calcium, usually as a deposit as in peritendinitis calcarea.

Calcareous, *adj.*—Of the nature of lime; chalky.

Calcific, *adj.*—Lime or made of lime.

Calcification, *n.*—The laying down of calcium salts in a tissue.

Calcified, *adj.*—Characterized by calcium, chalk or lime.

Calcified Cyst—A cyst in which lime has been deposited in the wall, making it more visible on x-ray examination.

Calcified Lymph Nodes—Deposition of calcium salts within lymph nodes.

Calcified Mesenteric Nodes—Calcification seen within mesenteric nodes in films of the abdomen.

Calcified Plaques—These are linear and flat depositions of calcium seen usually in the walls of large blood vessels, the gallbladder or cysts.

Calcifying Hematoma—A collection of blood in the tissues in which lime has been deposited.

Calcinosis, *n.*—Deposit of calcium salts in soft tissues in locations where they are not normally found.

Calcis, *n.*—The os calcis or calcaneus; the heel bone.

Calcium, *n.*—The element calcium or Ca. Radioisotope is Ca^{45}.

Calcium Salts—Chiefly calcium phosphate and calcium carbonate which are deposited in bony structures.

Calcium Tungstate—A chemical substance used to coat fluorescent screens having the property of fluorescence when struck by x rays. This substance was first used by Thomas Edison in 1906 after testing a variety of chemical substances for their fluorescent qualities.

Calculus, *pl.* *-i*, *n.*—Commonly called "stones." Any abnormal concretion within the animal body, and usually composed of mineral salts.

Caldwell Projection[2]—A PA oblique position of the skull for radiography of the frontal and anterior ethmoid sinuses made with an angle of 23 degrees toward the feet. Named for Dr. Eugene W. Caldwell who devised the position.

Calibration, *n.*—(of an x-ray machine) Charting the voltage output for different buttons of the autotransformer, at various milliamperages, measuring r output.

Caliceal Diverticulum—An outpouching of one or more of the renal calices.

Caliceal Ectasia—Enlargement of a kidney calyx. Caliectasis.

Calicosis, *n.*—A disease of the lungs caused by inhalation of fine particles of calcium dust.

Caliectasis, *n.*—Dilatation of a renal calix.

Calix, (calyx) *pl.* *-ces*, *n.*—One of the subdivisions of the kidney structure shaped like a funnel for collecting urine.

Callosum, *n.*—Hard. The corpus callosum or the great transverse commissure between the cerebral hemispheres situated at the bottom of the longitudinal fissure.

Callus, *n.*—The plastic new bony material which is thrown out by nature around the ends of broken bones.

Callus Formation—Development of new bone, uniting fragments of a fracture.

Calorie, *n.*—The unit of heat: The amount of heat necessary to raise the temperature of one gram of water one degree centigrade.

Calorimeter, *n.*—An instrument or apparatus for the measurement of calories.

Calutron, *n.*—A machine used to separate various uranium isotopes based on the mass spectrograph principle.

Calvaria, *n.*—Synonymous with calvarium, meaning the cranium.

Calvarium, *n.*—The skullcap or cranium; same as calvaria.

Calve's Disease—Osteochondritis of the hip joint. (Also spoken of as Legg-Perthes' disease.)

[1] Caffey, J. and Silverman, W. A.: Infantile cortical hyperostoses; Preliminary report on a new syndrome. *American J. Roent. & Rad. Ther.*, *54*:1, 1945.

[2] Caldwell, Eugene W.: Skiagraphy of the accessory sinuses of the nose, *Am. Quart. of Roentgenol.* 1906/7, i, #2, 27.

Calve's Vertebra Plana[1]—This is osteochondrosis of the primary centers of ossification of the vertebral bodies seen in young children. (cf. Scheuermann's disease.)

Calyceal, *adj.*—Pertaining to the calyx or calices.

Calyceal Diverticulum—(Pyelogenic cyst.) This is an outpouching of a calyx into the renal cortex, is smooth-walled and of no pathological significance.

Calyx, (calix) *pl. -ces, n.*—The small funnel shaped structures into which the renal papillae dip for the separation of urine.

Camp's Grid Cassette—Devised by Dr. John D. Camp of Los Angeles. This is a cassette incorporating a special thin wafer grid of special design in the cover of the cassette.

Canal, *n.*—An open passageway.

Canal "Rays"—Positive ions which have passed through an opening in the cathode of a gas x-ray tube.

Cancellous Bone—The spongy, soft portion of the ends of a long bone.

Cancer, *n.*—Any malignant new growth of cells.

Candle Power—The unit of intensity of illumination; for instance, sixteen candle power electric bulb.

Cannula, *n.*—A metallic tube inserted into a vessel or cavity with a trocar in its lumen which, after removal, allows injection or withdrawal of fluid.

Cantho-Meatal Line—Base line of the skull extending from external auditory meatus to external canthus of the eye. (Reid's base line.)

Canthus, *n.*—The angle between the upper and lower eyelids, as the outer and inner canthus.

Capacitance, *n.* Ratio of the charge on a conductor to its potential; ratio of the charge on positive plate of a condenser to the potential difference across the plates.

Capacitor, *n.*—An instrument designed to have capacity for holding an electric charge, usually a small tubular mechanism used in the photo-timing circuit of x-ray equipment.

Capacity, *n.*—Used in electricity to indicate the full extent to which a condenser can be charged; often used to indicate an actual charge on any electrode.

Capillary, *pl. -ies, n.*—The minute terminal blood vessels which connect the arterial with the venous system.

Capitate, *n.*—Third bone in distal row of carpus, (os magnum).

Capitellum, *n.*—The outer portion of the articular surface of the lower end of the humerus for articulation with the head of the radius.

Capitulum, *n.*—A small, rounded articular end of a bone.

[1] Calvé, J.: Localized affection of the spine suggesting osteochondritis of vertebral body, with clinical aspect of Potts' disease, *J. Bone & Joint Surg. 7:* 41–46, 1925.

Capsule, *n.*—A membrane or sac containing an organ such as the kidney, liver and spleen.

Capsule of a joint—The fibrous tissue ligaments which form a surrounding cover for the joint.

Capture Cross-Section—The probability that a nucleus will capture an incident particle.

Capture, Radiative—The process by which a nucleus captures an incident particle and loses its excitation energy immediately by the emission of gamma radiation.

Caput Coli—Cecum; the colonic head.

Caput Succedaneum—The lump on a new born infant's head formed by fluids under the scalp from pressures of cervix during birth.

Carbuncle, *n.*—An abscess of the kidney; also multiple abscesses in an area of cellulitis of the skin.

Carcinogenic, *n.*—Any substance which is capable of producing cancer within the animal body.

Carcinoid, *n.*—A tumor having some characteristics of cancer; cancer-like.

Carcinoma, *n.*—Cancer of epithelial origin.

Carcinomatosis, *n.*—Widespread metastases of carcinoma throughout the body.

Carcinomatous, *adj.*—Of or pertaining to carcinoma or cancer.

Carcinosis, Miliary—A multicentric carcinoma of the lungs characterized by fine granular shadows throughout the lung fields.

Cardboard Holder—A packet for holding film for direct x-ray exposure without the use of intensifying screens. These are usually backed by a thin sheet of lead to absorb the secondary radiation.

Cardia, *n.*—Heart; also medial portion of fundus of stomach.

Cardiac, *adj.*—Pertaining to the heart or medial part of gastric fundus.

Cardiac Apex—The portion formed by the bluntly pointed portion of the left ventricle.

Cardiac Base—The portion across the heart from left auricle to back of right auricle; opposite to the apex.

Cardiac Borders—The right consisting of the right auricular wall and ascending aorta; the left consisting of the pulmonary artery conus, left auricular appendage and wall of the left ventricle.

Cardiac Catheterization—Passage of polyethylene catheters through the vascular structures into the heart for the purpose of introducing opacifying media, particularly in the study of congenital heart disease and coronary artery disease.

Cardiac Decompensation—Failure of the heart to perform efficiently.

Cardiac Diameters—(1) Transverse or the sum of the maximum right and the maximum left

from the midline, (2) Long diameter between left ventricular apex and notch between right auricle and the superior vena cava, (3) Broad diameter is the greatest diameter of the cardiac shadow perpendicular to the long diameter.

Cardiac Dilatation—Acute enlargement of the heart.

Cardiac Effusion—An interlobar pulmonary effusion resulting from cardiac decompensation.

Cardiac End of Stomach—The upper and medial portion of the fundus at the entrance of the esophagus.

Cardiac Enlargement—Refers to increase in the width of transverse diameter of the heart as well as increase in size of the chambers.

Cardiac Failure—Inefficient action of the heart causing decompensation and death.

Cardiac Fluoroscopy—A study of the various chambers of the heart directly with the fluoroscopic screen.

Cardiac Mensuration—Measurements of the various diameters of the heart as seen on the teleroentgenogram. (See also cardiac diameters.)

Cardiac Silhouette—The outline of the heart as seen against the lighter background of the lungs in a chest roentgenogram. This may be seen in the PA, lateral and right and left anterior oblique projections. (See also silhouette sign.)

Cardiac Tamponade—Pressure upon the heart as from blood within the pericardium.

Cardioangiography, *n.*—Visualization of the chambers of the heart by injection of an opaque medium.

Cardioesophageal, *adj.*—The site of junction of the esophagus with the cardia of the stomach.

Cardiophrenic Angle or Sulcus—The angle between the margin of the heart and the diaphragm.

Cardiospasm, *n.*—Spasm or contracture of the lower end of the esophagus preventing normal emptying into the cardia. (See Achalasia.)

Cardiothoracic Ratio—Refers to the relation of the measurement of the greatest transverse diameter of the heart to the intrathoracic measurement. This is also spoken of as Groedel's Index.

Cardiovascular, *adj.*—The heart and blood vessels; spoken of as CV disease.

Carditis, *n.*—Inflammation of the heart.

Caries, *n.*—Decay as in dental caries.

Carman Meniscus Sign[1]—A crescentic shadow with overhanging edges seen as a characteristic contour in ulcerating carcinoma of the stomach.

Carotid, *n.*—One of the two principal arteries, on each side of the neck, which convey the blood from the aorta to the head; pertaining to three great arteries of the neck, the common, internal and external carotid arteries.

Carotid Body—A small neurovascular structure located at the bifurcation of the common carotid artery.

Carotid-Cavernous Fistula—One between the internal carotid artery and the cavernous sinus.

Carpal Bones—The small bones of the wrist; eight in number: the navicular or scaphoid, lunate or semilunar, triquetrum, greater and lesser multangular, capitate or os magnum, hamate and pisiform.

Carpal Navicular—This term refers to the navicular bone of the wrist as distinguished from the one in the foot. (Also called scaphoid.)

Carpal Scaphoid—The navicular bone of the wrist or carpus.

Carpometacarpal Joints—The articulations between the wrist or carpus and the metacarpal bones of the hand.

Carpus, *n.*—The wrist.

Carrier—The quantity of an element which may be mixed with radioactive isotopes of that element giving a ponderable quantity to facilitate chemical operations.

Carrier-Free—The term applied to one or more radioactive isotopes of an element in minute quantity, essentially undiluted with stable isotope carrier.

Cartilage, *n.*—The structure covering the ends of the long bones to form joints.

Cartilaginous, *adj.*—Composed of cartilage.

"Cascade" Stomach—A stomach which fills pouches at successive levels, spilling over from one into another as a cascade.

Caseous, *adj.*—"Cheesy," as in caseous consolidation of tuberculosis.

Case's "Pad Sign"[2,3]—The "pad sign" refers to a circumscribed filling defect in the gastric silhouette seen in the horizontal position, which nearly or completely disappears when the patient stands before the vertical roentgenoscope, but which is reproduced in the vertical position by having the patient press his abdomen hard against the screen, or by making slight pressure with the examining fingers. This sign may be present, however, in cases of carcinoma of the posterior gastric wall, and also with certain pedunculated tumors of the stomach.

[1] Carman, Russell D.: Benign and malignant gastric ulcers from a roentgenologic viewpoint. *Am. J. Roentgenol.*, *8*:12, Dec. 1921.
idem.: A new roentgen-ray sign of ulcerating gastric cancer. *J. Am. Med. Assn.*, *77*:900–992, 1921.

[2] Case, James T.: Roentgenology of pancreatic disease, Caldwell Lecture. *Am. Jour. Roentgenol. and Rad. Ther.*, *44*: 485, 1940.

[3] Case, J. T.: Fifty years of roentgen rays in gastroenterology. *Am. Jour. Roentgenol. and Rad. Ther.*, *54*: 607, 1945.

Cassette, *n.*—A holder for x-ray film, usually with double intensifying screens.

Cassette Changer—A piece of radiographic apparatus designed for quick changing of cassettes in order to facilitate making stereoscopic exposure.

Cassette Tunnel—A device which permits slipping a cassette in and out beyond a part without moving the part, as for stereoscopic examination.

Castor Oil—A cathartic commonly used in preparation of a patient for a barium enema.

Castration by X Rays—Exposure of ovaries to sufficient doses of X radiation to destroy ovulatory function of the Graafian Follicles with resultant amenorrhea.

Cataract, *n.*—Opacification of the crystalline lens of the eye; radiation cataract is one produced by over-exposure to x or neutron radiation.

Catarrhal, *adj.*—Inflammation of a mucous membrane.

Cathartic Colon—Atonic condition of the colon caused by excessive catharsis.

Catheter, *n.*—Small caliber rubber tube for insertion into the bladder, other cavities or into blood vessels for angiography.

Catheterization—Passage of fine catheters through a blood vessel such as in the arm into a chamber or chambers of the heart, or catheterization of the ureters as in retrograde pyelography.

Cathode, *n.*—The negative terminal of an electrical apparatus, such as in an x-ray tube, from which heated filaments provide the electrons which bombard the target.

Cathode Ray Tube—A high voltage discharge tube so constructed that the cathode stream is permitted to emerge from the tube. (A Lenard tube.)

Cathode "Rays", or Stream—The stream of negative electrons which flows from the cathode to the anode (target) of an x-ray tube when activated by a high voltage electrical current.

Cation, *n.*—An ion which flows to the cathode or negatively charged pole of an electric cell or solution and gives up a positive charge.

Caudad, *adj.*—Toward the tail or away from the head. (cf. caudal.)

Cauda Equina—Nerve fibers extending in a fan-like fashion in the spinal canal below the termination of the spinal core.

Caudal, *adj.*—At the lower end of the body. (cf. caudad.)

Caudal Canal—A narrow tube or channel at lower end of vertebral column.

Cauliflower-like—Fungating type of tumor with irregular surface, resembling a cauliflower.

Cavernous, *adj.*—Pertaining to a cavity or space such as the cavernous sinus in the base of the cranium.

Cavitation, *n.*—Formation of a cavity, as in the lung in tuberculosis.

Cavity, *n.*—An area of destruction of the normal tissues or organs; any hollow place within the body, such as the pleural cavity.

Cavum Septi Pellucidi—The fifth ventricle which is a variable vertical cleft in the septum pellucidum.

Cavum Verage—The sixth ventricle is an anatomical variation which lies posterior to the septum pellucidum below the body of the corpus callosum and above the commissure of the hippocampus.

Cecal, *adj.*—Pertaining to cecum; blind, terminating in a closed extremity.

Cecal Volvulus—A form of intestinal obstruction in which the cecum is twisted, markedly dilated and rotated to form an isolated loop of bowel frequently in the left upper quadrant or in the left mid abdomen.

Cecum, *n.*—The pouch-like head (caput coli) of the large bowel proximal to its union with the small intestine; also a blind foramen in the skull.

-cele—Combining form or suffix indicating tumor or hernia.

Celiac Disease—A condition seen chiefly in young children which is marked by the passage of large whitish, frothy and offensive stools usually containing quantities of unsplit fat. These changes are accompanied by wasting, pallor, arrested development, a high-pitched weak voice and muscular weakness. Also spoken of as Gee-Herter syndrome.

Cell, *n.*—(electric) A piece of apparatus assembled into a unit for the generation of an electric current by chemical action; such cells are connected in series, parallel, or multiple, to form electric batteries. Also the smallest unit forming structures and organs.

Cellular, *adj.*—Pertaining to, composed of, or derived from cells.

Cellulitis, *n.*—Inflammation, frequently due to the streptococcus, of cellular and connective tissues.

Celomic Cyst—This is a so-called epipericardial fat pad usually presenting as an opacity in the right cardiophrenic sulcus.

Cementoblastoma, *n.*—A tumor formed from cementoblasts or cells from which the substantia ossea of the teeth is developed.

Cementoma, *n.*—A tumor arising from cells of the substantia ossea of the teeth.

Center of Ossification—A center in an epiphysis from which bone begins to develop.

centesis—Combining form or operative suffix indicating puncture.

Centigrade (C), *n.*—A scale for the recording of

temperature in which the freezing point of water is indicated at 0°C. and the boiling point at 100°C. at sea level.

Central, *adj.*—Within the center of.

Central Fracture—A fracture through the center of a joint; for instance, central fracture of the acetabulum of the hip joint.

Central Ray—The center of a beam of x rays coming from an x-ray tube.

Centripetal Force—A force keeping a moving mass attracted toward the center and hence describing a circular path.

Centrosome, *n.*—One of the intracellular structures from which spindle fibers radiate during cell division.

Cephalad, *adv.*—Toward the head.

Cephalhematoma, *n.*—Blood clot between bone of cranium and scalp.

Cephalic, *adj.*—Pertaining to the head.

Cephalic Indices—These are percentage relationships of the breadth of the skull to the length of the skull and determine whether a skull is brachycephalic, dolichocephalic or mesocephalic.

Cephalometry, *n.*—Measurements of the head of the living subject without removal of the soft parts.

Cephalopelvic, *adj.*—Relating to the relative size of the fetal head and the pelvic outlet.

Cephalo-Pelvic Disproportion — Birth canal measurements too small to allow passage of the fetal skull.

Cephalopelvimetry, *n.*—Co-ordinated measurements of the fetal head and the pelvic outlet to determine whether or not disproportion exists.

Cerebellar, *adj.*—Of or pertaining to the cerebellum, as the tonsils or fossae.

Cerebellopontine, *adj.*—Pertaining to the cerebellum and the pons varoli, such as cerebellopontine angle tumor.

Cerebellopontine Angle—The site between the cerebellum and pons (or medulla) where a tumor, commonly a neuroma, may arise.

Cerebellum, *n.*—The smaller portion of the brain beneath the tentorium cerebri which is the seat of most regulatory mechanisms of the body.

Cerebral, *adj.*—Pertaining to the cerebrum or brain; the cerebral hemispheres; also the cerebral fossae of the occipital bone.

Cerebral Angiography—Roentgenographic demonstration of the opacified blood vessels of the brain.

Cerebral Arteriosclerosis—Calcified plaques in the walls of the blood vessels or "hardening" of the arteries of the brain.

Cerebral Atrophy—Generalized atrophy of the brain such as seen in Alsheimer's disease.

Cerebral Concussion—Injury to the soft tissues of the brain resulting from a blow or violent shaking.

Cerebral Hypoplasia—Underdevelopment of the brain.

Cerebral Mucormycosis[1]—A mycotic infection of the nose, paranasal sinuses, orbits and cranial structures usually caused by Rhizopus, a member of the phycomycetes group.

Cerebrospinal Fluid—The fluid normally present in the ventricles of the brain, subarachnoid space, cisterns and spinal canal.

Cerebrum, *n.*—The greater portion of the brain above the tentorium cerebri which has to do with all mental functions and activities.

Cerosis, *n.*—Morbid condition of membranes resembling waxlike scales.

Cervical, *adj.*—Pertaining to the neck or cervical vertebrae; also relating to the cervix or neck of the uterus.

Cervical Rib—A supernumerary rib arising from the seventh cervical vertebrae.

Cervical Spine—That portion of the spine contained in the neck; more correctly, the cervical vertebrae.

Cervical Vertebrae—Vertebrae of the neck; normally seven in number.

Cervix, *n.*—(of Uterus) Neck of the uterus.

Cervix Uteri—Neck of the uterus or womb.

Cesium^{137} (Cs^{137}), *n.*—A radioactive isotope of cesium chloride emitting gamma radiation with an energy of 0.662 MEV and having a half-life of 37 years.

Chain Reaction—Chemical or nuclear reaction in which some of the products of the process of energy are released, inducing the disintegration of more and more of the same, so that the reaction continues spontaneously.

Chalasis (Chalasia), *n.*—Relaxation of any previously sustained contraction of muscle, as at the lower end of the esophagus. (cf. Achalasia.)

Chalicosis, *n.*—A condition in which the bronchial tubes and lungs are affected due to inhalation of small particles chiefly of stone dust.

Chalky, *adj.*—The quality of a radiograph which presents an extreme degree of contrast between the highlights and shadows.

Chalky Bone—This is a rare condition of unknown cause characterized by excessive calcium deposit and can be diagnosed by x-ray examination.

Chamber, *n.*—A compartment of the heart as an auricle or ventricle.

Chamberlain's Line—Named for a Philadelphia radiologist, W. E. Chamberlain, is a line drawn from the posterior margin of the foramen

[1] Smith and Yanagisawa: Mucormycosis. *New Eng. Jour. of Med.*, pp. 1007, 20, May 14, 1959.

magnum to the hard palate, below which the dens of the axis should normally be situated.

Chamberlain-Towne — (Towne-Chamberlain)—AP oblique projection of the skull suggested by Dr. W. E. Chamberlain as a means of demonstrating the petrous ridges. This description was published by Dr. E. D. Towne.[1]

Characteristic Radiation—The specific type of secondary radiation resulting when rays from an x-ray tube strike another substance such as copper.

Characteristic Rays—Secondary rays produced when x rays strike inorganic substance of greater atomic weight than aluminum. The wave length of the emitted radiation is specific for the element concerned.

Charcot's Joint—A destructive process caused by the late effects of syphilis. A form of neurotrophic arthropathy; luetic arthropathy.

Charge, *n.*—Quantity of electricity.

Chassard-Lapine Position[2,3]—Sitting position for barium examination of rectum and sigmoid colon. The tube is angled 7° to 10° anteriorly. Bucky exposure with patient sitting at end or side of table. (see also Rapp's Position).

Chemical Exchange—Process in which an atom in one kind of chemical substance exchanges places with a similar atom in a different substance.

Chemical Fog—A blurred appearance of the radiograph produced by contaminated developer or other chemicals, not by light or x rays.

Chest, *n.*—The upper portion of the trunk containing the heart and lungs; separated from the abdomen by the diaphragm.

Chip Fracture—A small fracture where only a fragment or piece of cortex has been separated from the main body of the bone.

Choana, *pl-e, n.*—The posterior naris where it opens into the nasopharynx. The nasal fossa on either side of the throat.

Choke Coil—A piece of electrical apparatus consisting of a coil of wire wound about an iron core, introduced into an alternating current circuit, the purpose of which is to control the amount of iron core inserted into the coil, and thereby regulate the current.

Choked Disc—Referring to swelling of the disc of the optic nerve, causing edema from excessive serous infiltration and commonly seen in increased intracranial pressure and such constitutional disease as uremia.

Cholangiogram, *n.*—Visualization of the bile ducts usually by intravenous injection of an opaque medium or by injection of the medium through a T-tube.

Cholangiography, *n.*—X-ray examination to visualize the opacified biliary tree following intravenous injection of the opaque medium.

Cholangitis, *n.*—Inflammation of the biliary tract.

Cholecystitis, *n.*—Inflammation of the gallbladder.

Cholecystitis, Emphysematous—Inflammation of the gallbladder associated with gas shadows in its walls.

Cholecystoenteric Fistula—An abnormal connection formed between the gallbladder and the intestine.

Cholecystoenterostomy—Production of a surgical anastomosis between the gallbladder and the intestine, usually the duodenum.

Cholecystogram, *n.*—An x-ray examination of the gallbladder, usually 8–12 hours after oral administration of the opaque medium.

Cholecystokinin, *n.*—A hormone believed to stimulate action of the gallbladder.

Choledochogram, *n.*—Injection of an opaque medium postoperatively through a T-tube passing into the hepatic and common bile ducts.

Choledocholithiasis, *n.*—Stones in the bile ducts.

Cholelithiasis, *n.*—Calculi or bile stones in the gallbladder or gall duct; these may be opaque or radiolucent.

Choleliths, *n.*—Gall stones.

Cholesteatoma, *pl. -ta, n.*—A mass of granulation tissue in a large bone cavity commonly in the mastoid, caused by chronic infection which forms cholestrin crystals.

Cholesterolosis, *n.*—Deposition of excessive amounts of cholesterol, most commonly seen in the wall of the gallbladder and less frequently in the skin, associated with hypercholesterolemia.

Cholex, *n.*—A proprietary cholecystographic medium.

Cholografin, *n.*—A proprietary cholecystographic medium designed for intravenous injection to opacify the gallbladder and the biliary radicles and ducts.

Chondral, *adj.*—Pertaining to cartilage.

Chondritis, *n.*—Inflammation of cartilage.

Chondroblastoma, *n.*—An embryonal type of cartilage tumor, which is benign.

Chondrodysplasia, *n.*—Badly formed cartilage.

Chondrodystrophia Fetalis—A chondrodystrophia formed in utero.

[1] Towne, E. D.: Erosion of the petrous bone by acoustic nerve tumor, *Arch. Otolaryng. 4:* 15–519, 1926.

[2] Chassard & Lapiné: Etudé Radiographique de L'Arcarde Publeinne Chez La Femme Enceinte; Une Nouvelle Methode D'Appreciation du Diametre Bi-Ischiatique. *J. de Radiol. et D'Electrol., 7:* 113–124, 1923.

[3] Van Herrik, M. and Good, C. Allen: Comparative accuracy of the Chassard-Lapiné and recumbent positions in roentgen measurement of the pelvic outlet. *Radiology, 54:* 392, Mar. 1950.

Chondroepiphysitis, *n.*—Inflammation of the cartilaginous portions of the epiphysis.

Chondroma, *n.*—A benign cartilaginous tumor.

Chondroma-Enchondroma—A cartilaginous tumor occurring within a bone near the epiphyseal line expanding the diaphysis without breaking through.

Chondrosarcoma, *n.*—Sarcoma with cartilaginous elements; a cartilaginous tumor characterized by rapidity of growth.

Chordae Tendinae—Tendinous bands extending from the papillary muscles to the margins of the atrioventricular valves of the heart.

Chordoblastoma, *n.*—A tumor developing from the primordial cells of the notochord.

Chordoma, *n.*—A tumor arising from the primitive notochord usually either at the base of the cranium or in the sacrum.

Chorio-Epithelioma—A malignant tumor developing from the decidua after birth or, more commonly, after abortion at the site of the placenta.

Choroid Plexus—A plexus or network of blood vessels on the inner wall of the lateral ventricles of the brain.

Christian-Hand-Schuller Disease[1]—Xanthomatosis and also one of the reticuloendothelioses. Manifested roentgenologically by punched out defects in the skull and other bones, with associated exophthalmos and diabetes insipidus.

Chromaffin, *n.*—Certain of the cells found in the medulla of the adrenal glands.

Chromaffin Bodies—Paraganglia which may give rise to a paraganglioma.

Chromaffinoma, *n.*—A tumor of chromaffin tissue, paraganglioma or pheochromocytoma.

Chromatid, *n.*—One of the sister threads of the longitudinally divided chromosomes prior to nuclear division.

Chromatin, *n.*—Nuclear protein material from which chromosomes are formed.

Chromic Radio-phosphate ($CrP^{32}O_4$)—A colloidal suspension for parenteral administration in the palliative treatment of certain malignancies, particularly to suppress pleural and peritoneal fluid accumulations due to metastases. Also used for diagnostic purposes because it is deposited in the liver and spleen.

Chromophile, *adj.*—A tumor of the pituitary gland readily staining either acid or base.

Chromophobe, *adj.*—A tumor of the pituitary gland containing cells which do not take an acid or base stain,

Chromosome, *n.*—A tod or thread-shaped body of chromatin in the cell nucleus which splits longitudinally as the cell divides, one half going to the nucleus of each of the daughter cells.

Chromosome Aberration—Fortuitous rearrangement of chromosome parts following breakage and reunion of the broken ends.

Chromosome Deletion—Loss of a piece of a chromosome.

Chromosome, Sex—A chromosome having to do with the sex determination of offspring.

Chromosome, Translocation—Transposition of a part of a chromosome, either to a different part of the same chromosome or to another one.

Chromosomes, Homologous—Ones in which the same gene loci are in the same sequence.

Chronic, *adj.*—Having a protracted, prolonged course.

Chronic Exposure—Long continued radiation exposure either by fractionation or protraction; opposite of acute exposure.

Chylothorax, *n.*—Presence of chyle in the thoracic cavity as by rupture of the thoracic duct.

Cicatricial, *adj.*—Pertaining to scar, as in the duodenal bulb.

Cicatrix, *n.*—A scar left by a healed wound.

Cilia, *n.*—Slender filiform structures found on some cells, having a wave-like or lashing motion.

Cinefluorex, *n.*—A trade name for a motion picture camera attached to an image amplifier to produce cinefluorograms.

Cinefluorogram, *n.*—One of a series of motion pictures made by a cinefluorographic apparatus.

Cinefluorographic Examination (Cinefluorography)—A moving picture camera used with an image amplifier to record a moving study of the fluoroscopic observations.

Circuit, *n.*—A completed (metallic) pathway for the flow of an electric current.

Circulation, *n.*—Passage of blood through arteries and veins as in the general and pulmonary circulation.

Circumscript, *adj.*—Something which is confined within a small area or circumscribed.

Cirrhosis, *n.*—Atrophy or degeneration of the parenchymal cells of an organ, with hypertrophy of interstitial connective tissues.

Cirsoid Angioma—One resembling varices within a vein because of dilatation and tortuosity.

Cisterna Ambiens—(Cisterna Venae Magna Cerebri) One of the subarachnoid spaces at the base of the brain extending on either side of the base of the brain posterior to the quadrageminal plate and pineal gland and above the cerebellum.

Cisterna Chiasmatis—One of the smaller basal cisterns extending around the optic chiasm.

[1] Christian, Henry A.: Defects in membranous bones, exophthalmos and diabetes insipidus. *Contributions to Medical and Biological Research, 1*:390–401, 1919, (Osler, Wm., Editor).

Cisterna Interpeduncularis—One of the subarachnoid spaces or basal cisterns between the cerebral peduncles.

Cisterna Magna (C. Cerebellomedullaris)—A large expansion of the subarachnoid space surrounding the lower portion of the medulla and cerebellum, and forming the largest of the basal cisterns of the cranium.

Cisterna Pontis—An upward extension of the subarachnoid space of the spinal cord which is continuous about the medulla oblongata and communicating with the cisterna magna. One of the basal cisterns of the cranium.

Clark Cell—A standard cell of specific construction for the measurement of a definite voltage; used in calibration of meters.

Clavicle, *n.*—The "collar bone," extending between its joint with the acromion process of the scapula to its joint with the sternum near the midline.

Claw-Hand *n.*—A claw-like deformity of the hand due to contracture of the extensor muscles.

Clearing Agent—Hyposulphite of Soda is added to other ingredients in the fixing solution to clear and fix the film after developing.

Cleavage, *n.*—The process involved in cell division, characteristic of early stages of the embryo.

Cleft, *n.*—A groove, or separation.

Cleft Palate—Congenital defect in the roof of the mouth caused by failure of the palate bones to unite.

Cleft Vertebra—This is a hemi-vertebra due to lack of fusion or partial fusion of the right and left halves during embryonic development.

Cleidocranial Dysostosis—A congenital and hereditary abnormality in which the clavicles are incompletely developed, there is no ossification in the pubes, limited ossification of the skull and odd shapes of phalanges with osteoporosis.

Clinical, *adj.*,—Relating to the bedside of the patient or to a clinic where the patient may be seen by a number of physicians.

Clinoid Process—Small bony processes, anterior and posterior, adjacent to the sella turcica in the skull.

Clivus, *n.*—Portion of the sphenoid bone connecting the dorsum sellae with the basioccipital.

Cloaca, *n.*—A common reservoir or sac into which both ureters and the intestine empty.

Cloud Chamber—A device for observing the path of an individual radiation particle. The track is made visible to the eye because fog droplets are formed along the path of particles.

"Clover-Leaf" Deformity—A disfigured duodenal bulb, having roughly the appearance of a 3 leaf-clover and due to contraction of scar tissue following or associated with chronic duodenal ulcer. (Also "trefoil deformity.")

Club Foot—Congenital deformity of the foot of several anatomical varieties.

Club Hand—Talipomanus.

Clump Kidney—An amorphous, undeveloped kidney.

Co, Con, *prefix*—With or together.

Coagulation, *n.*—Congealing of a liquid, as coagulation of the blood.

Coalesce, *v.*—To grow together and form one body.

Coalescence, *n.*—Fusion or growing together of two or more parts of bodies.

Coarctation, *n.*—Compression of the walls of a vessel as the aorta; shriveling; a stricture.

Coarctation of the Aorta—Constriction of a segment of the arch of the aorta.

Cobalt^{60} (Co^{60})—A radioisotope used as wafers, pearls, or in needles providing a source of 1.1–1.3 /^{Mev}/ gamma radiation. It has a half-life of 5.3 years. (See also Radiocobalt.)

"Cobra Head" Sign—Seen in ureterocele, representing dilatation of the ureter, and usually surrounded by a halo of radiolucent bladder wall.

Cocaine, *n.*—A drug used to produce local anesthesia.

Cocainization, *n.*—Infiltration of a tissue with cocaine for local anesthesia.

Coccidioidomycosis, *n.*—A coccidioidal granuloma. Syns: "Valley fever," "desert rheumatism," "San Joaquin Valley fever."

Coccidiosis, *n.*—Nodular formations scattered over the body due to infestation with Coccidium and resulting symptoms.

Coccus, *n.*—Spherical shaped micro-organism.

Coccygeal, *adj.*—Pertaining to the coccyx; four terminal vertebral bodies.

Coccygeal Vertebra—These are four rudimentary vertebrae, articulating above the sacrum, and representing a remnant of the vertebrate tail.

Coccyx, *n.*—The "tail bone" at the end of vertebral column; usually composed of three or more segments, attached to the lower end of the sacrum.

Coding System[1]—An index in which various organs or parts are assigned numerals with decimals for each disease process or abnormality.

Codman's Triangle—A subperiosteal point of reactive bone formation caused by pressure of a tumor within bone elevating the periosteum and forming an angle with the normal periosteum of the shaft of the bone.

[1] *Index for Roentgen Diagnoses*, Chicago, The American College of Radiology, 1955.

Coeur en Sabot—Boot shaped heart; a congenital anomaly having an interventricular septum defect.

Coeliac (Celiac) Disease—A condition seen chiefly in young children which is marked by the passage of large whitish, frothy and offensive stools usually containing quantities of unsplit fat. These changes are accompanied by wasting, pallor, arrested development, a high-pitched weak voice and muscular weakness. Also spoken of as Gee-Herter syndrome.

Cohesion, *n.*—Clinging together of the particles of a substance.

Coil, *n.*—A copper wire wound as a helix around a central core as in a magnet.

Coincidence—Simultaneous occurrence of ionizing events in one or more detectors, or within an assignable time interval, as a result of the passage of a single particle or of several generically related particles.

Coincidence Correction—To correct the observed count, to count free of coincidence losses, by mathematical calculation.

Coin Lesion—A misnomer describing a spherical or nodular infiltrative lesion of the lungs. (See also nummular lesion.)

Colectomy, *n.*—Excision of a portion of the colon or of the whole colon.

Colic, *adj.*—Pertaining to the colon.

Colitis, *n.*—Inflammation of the colon.

Colitis, Idiopathic Ulcerative—A severe chronic inflammatory disease of the colon characterized by multiple ulcerations of the mucosa.

Collagen Disease—A group of diseases having changes in the mesenchymal structures or connective tissues in common and including periarteritis nodosa, lupus erythematosus, scleroderma, dermatomyositis, rheumatoid arthritis and certain allergic conditions.

Collagenoses, *n.*—The group of collagen diseases. These include scleroderma, dermatomyositis, periarteritis nodosa, lupus erythematosus and rheumatoid arthritis.

Collapse, *v.*—To fall together; *n.*—The state of a patient when his faculties fail and he becomes unconscious.

Collar Bone—The clavicle.

Collateral Circulation—One supplying blood by small anastomosing vessels when the main artery is closed.

Colles' Fracture—Fracture of the lower end of the radius with characteristic silver-fork deformity.

Colliculus, *n.*—A small hump or elevation above the neighboring parts.

Collimate, *v.*—To confine or limit a beam, as of x rays, to a definite area.

Collimator, *n.*—A diaphragm or other device for confining a beam of radiation within a limited area, particularly a square or rectangle. (cf. cone).

Collimation, *n.*—Restriction of a beam of x rays, as by square or rectangular diaphragming, or by use of a cone or cylinder.

Collimex, *n.*—A proprietary name to designate a lighted x-ray beam collimator.

Collision, *n.*—Striking together of two material bodies. Spoken of as an encounter between two subatomic particles which changes the existing momentum and energy conditions.

Collision, Elastic—An encounter by which kinetic energy and momentum of each system are conserved.

Collision, Inelastic—An encounter where one system gains internal excitation energy at the expense of the total kinetic energy of their central motion.

Collision Screws, *n.*—Full thread screws used to fasten broken ends of bones. (See chart p. 109.)

Colloidal Dispersion—Particles which are held in suspension in a colloidal solution from which they do not readily precipitate.

Colloidal Solution, *n.*—A solution in which electrically charged particles are held in suspension.

Colloid Cyst—One containing a glue-like, translucent yellowish homogeneous material found in cells and tissues in the state of colloid degeneration, commonly in the thyroid gland.

Colon, *n.*—The large bowel; composed of cecum, ascending, transverse, descending, pelvic, sigmoid, recto-sigmoid, and rectum.

Colon, Chronic Catharsis—Marked dilatation of the bowel which may resemble long standing chronic ulcerative colitis that may develop as a result of habituation to cathartics.

Colon, Interposition of—A developmental variation in which portions of the transverse colon and the hepatic flexure lie between the right hemidiaphragm and the liver. This must be differentiated from gas beneath the diaphragm, which can usually be done by recognizing haustral markings.

Coloptosis—A downward displacement of the colon.

Colostomy, *n.*—Artificial opening into the colon in the abdominal wall.

Colo-Vesical Fistula—One communicating between the urinary bladder and the large bowel or colon.

Column, *n.*—An anatomical part or structure in the form of a pillar or cylinder, such as the anterior column cells of the spinal cord.

Coma, *n.*—A state of unconsciousness.

Comminute, *v.*—To splinter.

Comminuted Fracture—A bone crushed in many directions.

Commissure, *n.*—Meeting point of fibrous band between two parts.

Common Bile Duct—A large duct receiving the hepatic radicles from the liver and the cystic duct from the gallbladder and emptying its contents into the duodenum at the ampulla of Vater.

Commutator, *n.*—A piece of electrical apparatus designed for reversing the flow of an electric current; the segmented contacts on the end of the shaft of a motor, or generator.

Comparison Film—One made of the opposite side of the body of the part in question, especially where epiphyses of bones are involved, so that a comparison with the unaffected side may be made.

Compensating Filter, *n.*—A filter of aluminum or plastic opaque material which is interposed between the x-ray tube and patient so as to shield less dense areas, and thereby produce a more uniform quality in the radiograph.

Compensatory, *n.*—Usually spoken of scoliosis where there is counterbalancing effect in the opposite direction so that a modified S-shaped curve is formed.

Compensatory Emphysema—Enlargement of the alveoli of the lung to compensate for a diseased or removed portion of the lung.

Complete Fracture, *n.*—A fracture which extends completely through the bone.

Compound, *n.*—A substance formed by the chemical union of two or more elements in a fixed proportion by weight.

Compound, *v.*—In pharmacy, meaning to put together the ingredients of a prescription or formula.

Compound Fracture—Fracture of a bone which penetrates the skin or communicates with the outside air.

Compression, *n.*—Flattening force causing fracture as of the body of a vertebra in compression fracture.

Compression Band—A broad band of heavy cloth or similar material used to immobilize a part during x-ray examination.

Compression Bladder—An inflatable bag which may be used in conjunction with a compression band for applying pressure to abdominal organs as the urinary bladder and ureters in pyelography.

Compression Technique—An x-ray examination performed by means of a pressure cone with which it is possible to demonstrate ulcer craters and/or polypi within hollow viscera.

Compton Effect—(Compton Scatter) Interaction of a photon of x or gamma radiation with an orbital electron of the absorber atom producing a recoil electron and a photon of energy which is less than that of the incident photon.

Concha, *pl.* *-ae,* *n.*—A structure resembling a shell in shape, as the hollow of the external ear (c. auriculae); turbinated bones of the nasal cavity.

Condensation, *n.*—This refers to an abnormal deposit of bony elements as at the site of inflammation.

Condenser, *n.*—A piece of electrical apparatus consisting of a number of metallic plates arranged parallel with each other, each alternate one of which is connected to opposite charges but separated by insulating material. The purpose of this is to store up an electrical charge, very much the same as water is accumulated in a tank.

Conductivity, *n.*—The property which permits the passage or flow of an electric current; used also to indicate the conduction of heat.

Conductor, *n.*—A substance, usually a metal, having low electrical resistance which will permit the flow of large amounts of electricity without generation of excessive heat or substantial voltage loss.

Condyle, *n.*—A rounded projection on a bone which forms an articulation such as, medial and lateral condyles of the femur.

Condyles of Femur—Two rounded prominences of bone at the lower end of the femur which form the joint with the knees.

Condyloid, *n.*—Resembling a rounded articular surface at the extremity of a long bone.

Cone, *n.*—A metallic tubular extension to place between the x-ray tube and the patient to limit the field of examination to that of the structures desired and to aid in the proper centering of the rays. (cf. collimator).

Configuration, *n.*—Describes the shape and form of an object.

Confluent, *adj.*—Running together; coalescence as of shadows in some lesions of the lungs.

Confluent Markings—Coalescence of vascular and other lung tissue shadows as in exudative and infiltrative disease.

Congenital, *adj.*—Present at birth.

Congenital Cyst—A sac or tumor originating during development.

Congenital Disease—One dating from birth.

Congenital Valve—A fold of membrane persisting in the urethra which may cause partial or complete obstruction.

Congestion, *n.*—Excessive stagnation of blood from interference with normal circulation.

Congestive Failure—Decompensation or weakness of the heart, with associated stagnation of the blood especially in the pulmonary circulation.

Conglomerate, *adj.*—Composed of several parts aggregated into a single mass as in certain large compound glands. Also spoken of as conglomerate masses in third stage pneumoconiosis.

Conjugate, *adj.*—One of the diameters of the pelvis or sacro-pubic diameter, measuring the anteroposterior diameter of the pelvic inlet.

Connected, *n.*—Electrical conductors joined so that an electron flow may be continuous.

Connection, *n.*—The place of union of two electrical conductors to form a path over which electricity may flow from one to the other.

Connective Tissue—A basic structure of the body formed of altered cells with flattened nuclei and drawn out fibrils.

Conservation of Mass-Energy—According to Einstein's equation $E = mc^2$, energy and mass are interchangeable. In this equation, E is energy, m is mass, and c is the velocity of light.

Consolidation, *n.*—Solidification of a porous structure, as consolidation of the lung.

Constant Potential, *n.*—An electric current having a constant direct voltage.

Constant Voltage—An electric current whose magnitude does not vary to a great extent.

Constipation, *n.*—Infrequent or incomplete movement of the bowels. (cf. obstipation).

Constriction, *n.*—Narrowing of the lumen or opening of a tubular structure.

Contact, *n.*—A switch or lever designed to bring two ends of a connector together so that a current may flow.

Contact Radiation Therapy—Relatively low voltage superficial therapy, delivered by a tube having an extremely short target-skin distance, and capable of delivering large doses per minute.

Contamination, Radioactive—Scattering of radioactive material in places where its presence may be harmful.

Contour, *n.*—The shape or outline of a structure.

Contra, *prefix*—Opposite, or against.

Contraction, *n.*—To become shorter or smaller.

Contrast, *n.*—The difference in density between the high lights and shadows seen in a roentgenogram.

Contrast Material—Opaque media used to opacify hollow viscera, organs such as the kidneys or blood vessels as in angiography. Also air or gas used in encephalography, arthrography or by retro or intraperitoneal injection, etc.

Contrast Radiography—X-ray examination, as of the paranasal sinuses or other hollow structures, after injection, instillation or ingestion of contrast material, like air or opaque medium.

Control Rods—Neutron-absorbing material such as cadmium or boron steel inserted in the form of rods in the pile of a nuclear reactor to control the chain reaction at a steady level.

Contusion, *n.*—A bruise.

Conus, *n.*—A cone; staphyloma of myopic eye; conus of pulmonary artery.

Convergence, *n.*—The coming together of lines or rays; as, convergence of radiation.

Converter, *n.*—(Rotary.) A motor run by one type of electrical current which acts as a generator for another type of current motor-generator, thereby converting the current from one type to another, as A.C. to D.C. current. Also, spoken of a nuclear reactor which converts fertile atoms into fuel by neutron capture. (See also "breeder.")

Convolution, *n.*—A winding motion; a turn or fold; in anatomy, a coil of tissue on the brain surface, separated by fissures.

Convolutional Atrophy—Atrophy of the bones of the skull, taking on the form of the convolutions of the brain, due to increase in intracranial pressure.

Convolutional Markings—The markings or impressions produced on the inner table of the skull from pressure of the convolutions of the underlying brain.

Cooley's Erythroblastic Anemia—A form of blood dyscrasia manifested roentgenologically by perpendicular spicules of bone on the outer table of the skull.

Coolidge Control—The choke coil used to control the heat of the filament of an x-ray tube.

Coolidge Transformer—The small, step-down transformer used on x-ray apparatus to furnish current for heating the filament of the x-ray tube.

Coolidge Tube—(Of universal type.) The hot cathode tube originally designed by William D. Coolidge having a solid tungsten target, an incandescent filament for the cathode, operating in a vacuum tube.

Cooling, *n.*—Setting aside a highly radioactive material for some time until the radioactivity has reduced to a desired level.

Coprolith, *n.*—A hard mass, usually in the recto-sigmoid, consisting of inspissated feces. These also occur in the appendix and within diverticula of the large bowel.

Coprostasia, *n.*—Constipation or costiveness.

Coraco-Acromial—The joint between the coracoid process of the scapula and the acromion.

Coracoid Process of the Scapula—The hook-like process projecting from the scapula for muscle attachments; origin of short head of biceps brachii.

Cor Bovinum—Greatly enlarged heart. (Beef heart.)

Corium, *n.*—The cutis vera or true skin.

Corkscrew Esophagus—Curling of the esophagus due to functional derangement giving it the appearance of a corkscrew.

Cornea, *n.*—A curved, horny, transparent coat forming the anterior sixth of the eyeball.

Cornu, *pl.* **-a,** *n.*—A horn, or horns, such as the

cornua of the uterus and the horns of the lateral ventricles of the brain.

Corona, *n.*—The brush-like discharge of a high voltage electric current which takes place from sharp points and angles in a high tension circuit.

Coronal Plane—Frontal plane, or plane parallel to the front of the body.

Coronal Suture—The suture of the skull running transversely across the front part of the head between the frontal and parietal bones.

Coronary Artery—A first branch of the aorta furnishing blood to the heart muscle.

Coronary Occlusion—Blocking of a coronary artery as by thrombus or embolus.

Coronoid, *adj.*—Shaped like a crow's beak or crown; coronoid process, a process of the ulna projecting in front; also one of the lower jaw above the angle.

Coronoid Fossa—The depression in the anterior surface of the lower end of the humerus into which the coronoid process of the ulna fits during flexion of the elbow.

Coronoid Process—A beak-like projection on the upper surface of the mandible, above the angle; also a process of the ulna.

Cor Pulmonale—Heart disease secondary to a disease of the lungs usually one offering resistance to peripheral blood flow in the lungs such as chronic and fibrotic changes, arteriosclerosis, Ayerza's Disease, certain congenital heart lesions. In this condition there is predominantly hypertrophy of the right side of the heart.

Corpus, *pl. ora,* *n.*—Body.

Corpus Callosum—The great transverse commissure between the cerebral hemispheres lying at the bottom of the great longitudinal fissure and covered on each side by the gyrus cinguli.

Corpuscle, *n.*—A primary atom, electron or any small mass or body including a blood cell.

Corpuscular Radiation—Subatomic particles such as electrons, protons, neutrons, alpha and other groups travelling together in streams of high velocity.

Corpus Uteri—The body of the uterus, separate from the cervix.

Cortex, *n.*—The outer gray matter of the brain; the outer cells of the adrenal glands; the outer core of tubular bones and the peripheral portion of the kidneys.

Cortical, *adj.*—Pertaining to cortex.

Cortical Atrophy—Degenerative changes primarily in the cortex of the brain.

Cortical Necrosis—Death or destruction of the cortical or functioning portion of an organ such as the kidney or brain.

Cortical Sulci—The deep grooves or fissures between the convolutions of the brain.

Cosmic Rays—An extremely penetrating form of radiation of unknown origin probably coming from interstellar space, and consisting of both particulate and electromagnetic forms. These are a source of background radiation.

Costal, *adj.*—Pertaining to the ribs.

Costal Cartilages—The cartilages forming the anterior portions of the ribs, serving to attach them to the sternum.

Costen's Syndrome, *n.*—Pain in the ear and impaired hearing due to malocclusion of the temporomandibular joint.

Costochondral Junction—Pertaining to ribs and its cartilage.

Costophrenic Sulcus or Angle—The angle formed by the ribs and the diaphragm.

Costovertebral, *adj.*—Pertaining to ribs and vertebra.

Cotyloid Cavity—The acetabulum, a cup-like cavity.

Couch, *n.*—A term used principally in Britain to mean a radiographic examining table.

Coulomb, *n.*—Unit of charge on an electron which is 1.60×10^{-19} coulombs. Named for a French physicist C. A. Coulomb.

Count, *n.*—In radiation measurements, the external indication of an apparatus designed to enumerate ionizing events.

Counter Electromotive Force—An electromotive force, or electric current, which is generated in the opposite direction in any electromagnetic coil activated by an alternating current. It is due to this counter electromotive force that a choke coil reduces the flow of an electric current.

Counting Rate Meter—An apparatus designed to give a continuing indication of the average rate of ionizing events.

Coutard's Method[1]—Breaking up a total dose of x radiation into small fractions of low intensity given at daily or alternate daily intervals.

Coxa Magna—Prominent hip caused by enlargement of the femoral head and neck.

Coxa Malum Senilis—Degenerative arthritis of the hip joint. (See also malum coxae senilis and morbus coxae senilis.)

Coxa Valga—Curvature of the neck of the femur causing abduction of the femora and bowlegs.

Coxa Vara —A deformity produced by decrease in angle made by head and neck of femur with the shaft. Normally it should be 120°; but in C. Vara it may be 80–90°. It occurs in Rickets or may be due to bone injury.

Craniad, *adj.*—Toward or to the head.

[1] Coutard, H.: Roentgenotherapy of epitheliomas of the tonsillar region, hypopharynx and larynx from 1920 to 1926, *Am. J. Roentgenol., 28:* 313, 1932.

Cranial, *adj.*—Pertaining to the head.

Cranial Fossa—One of the anatomical divisions of the base of the cranium. There are three of them: Anterior, middle, and posterior.

Cranial Palsies—Paralysis of the various cranial nerves.

Craniectomy—Excision of a portion of the cranium.

Craniocleidodyostosis—Congenital malformations of the cranium associated with absent clavicles. (See also cleidocranial dyostosis.)

Craniolacunia, *n.*—Holes in the skull spoken of as luckenschadel disease.

Craniopathy, *n.*—Any disease of the cranium.

Craniopharyngioma, *n.*—Tumor of the pituitary stalk or Rathke's pouch situated above the sella turcica and usually containing flecks of calcium.

Craniostenosis, *n.*—Premature ossification of the sutures.

Craniotabes, *n.*—Demineralization of the skull, wide sutures and fontanelles as well as softening of the bone due to hypovitaminosis D.

Craniotomy, *n.*—Cutting into the cranium; in obstetrics, cutting off the head.

Cranium, *n.*—The bony structure housing the brain.

Cranium, Cerebral—The skull cap containing the brain.

Cranium, Visceral—The facial bones.

Crater, *n.*—Hole or pit as in an ulcer.

Crescentic, *adj.*—Sickle-shaped.

Crest, *n.*—A ridge of bone.

Cretinism, *n.*—A congenital disease of the thyroid gland manifested by arrested bodily growth and mental development resulting in dwarfed idiots.

Cribriform, *adj.*—Perforated with small apertures like sieve; plate of the ethmoid bone.

Crinkle Mark—An undesirable artefact produced on a roentgenogram by pinching or creasing the film while handling in the dark room.

Crista Galli—Shaped like a cock's comb; a triangular-shaped process of the large portion of the ethmoid bone to which the falx cerebri is attached anteriorly.

Critical Mass—The minimum amount of a given fissionable material (uranium 235 or plutonium 239) required for a spontaneous chain reaction.

Critical Size—Minimum amount of a fissionable material which will support a chain reaction.

Crohn's Disease—Terminal ileitis or regional enteritis. First described by Crohn and Ginzburg as a nonspecific granulomatous condition affecting principally the terminal ileum, cecum and ascending colon. It is characterized by relatively narrowed lumen and the so-called "string sign" where only a thin, stringy column of barium can be seen on the film. It is also characterized by "skip areas" and by areas of dilatation throughout the small bowel.[1]

Crookes' Tube—A vacuum discharge tube used by Sir William Crookes in early experimental work with cathode rays. Also produced x rays but he didn't know it. This tube usually contained a Maltese cross at the anti-cathode end which would cast a shadow on the wall of a darkened room proving the existence of a stream of cathode rays.

Cross Arm Rectification—Mechanical rectification by means of cross arms for changing high voltage alternating current to unidirectional current.

Crossed Ectopy—A situation where one or the other kidney is crossed to the opposite side and may be fused with the other kidney producing a unilateral fused kidney.

Crossed Wires—When two uninsulated wires or electrical conductors carrying current in opposite directions come in contact they are said to be crossed and produce a short circuit.

Cross-Firing—Use of multiple opposing ports for x-ray therapy, so that a large dose of radiation may be delivered to a part in depth without adverse effect on the skin.

Cross-Section, Nuclear—This is a way of stating the probability that a given nuclear reaction will occur during bombardment of one substance by high (or low) speed particles of one kind or another. The area may be stated in terms of the barn, q. v.

Cross Table Examination—An x-ray examination where the patient is recumbent, and the x-ray beam is directed transversely as in dorsal or ventral decubitus positions.

Cruciate Ligament Tears—These are usually associated with avulsion fractures of the tibial eminence.

Cruciate Lines—The four ridges upon inner surface of the occipital bone, forming a cross and separating the cerebral and cerebellar fossae.

Cryptococcosis—This is one of the mycotic infections of the lungs or pulmonary torulosis. The roentgenographic signs are indefinite with principally the basilar portions of the lung being affected.

Crystal Grating—A crystal in which the atomic structure is suitably arranged to act as a diffraction grating for x rays in x-ray crystallography.

Cu—Chemical symbol for copper. Cu^{64} is the radioisotope.

Cubital Patella—A small sesamoid bone in the tendon of the triceps muscle overlying the olecranon process of the ulna.

[1] Crohn, B. B., Ginzburg, L., and Oppenheimer, S. D.: Regional enteritis. *J.A.M.A.*, *99*:1323, 1932.

Cuboid, *n.*—One of the tarsal bones; the outermost of the distal row.

Cul-de-Sac—Diverticulum or blind pouch which is closed at one end.

Cumulative Dose—The total dose of radiation from repeated exposures of the same region or whole body.

Cuneiform, *n.*—Wedge-shaped bones of the tarsus, internal, middle and external.

Cuneo-Navicular Joint—The joint between the cuneiform bones and the navicular bone in the foot.

Cunningham's Solution—A solution used for injection into the urinary tract for opacification before x-ray examination.

Cupola, *n.*—The little dome at the apex of the cochlea and of spiral canal; also, a hump on the diaphragm.

Curiage, *n.*—The amount of radioactivity in an isotope source. The curie content of a given Cesium source varies directly with its height for a constant diameter. If the diameter is varied, the curiage varies as its square. For instance, if the diameter is halved the curiage is reduced by a factor of 4.

Curie, *n.*—The quantity of radium gas (or radon) which is exactly in equilibrium with one gram of radium. Radium spontaneously degenerates into radon gas, which in turn spontaneously degenerates into radioactive deposit. Quantity of any radioactive element undergoing 3.7×10^{10} disintegrations per second.

Curie-Equivalent—An amount of radioactive material in which the disintegration rate is the same as that of one gram of radium, namely 3.7×10^{10} disintegrations per second.

Curie, Marie Sklodoska—The Polish chemist trained in Paris where she worked with her husband Pierre Curie as the co-discoverer of radium at the turn of the twentieth century.

Curium, *n.*—Element 96 which is not known in nature. Curium 240 and 242 have been made artificially and its atomic number is 96 and mass numbers 240–242.

Curling, *n.*—Spoken of the appearance of the esophagus like a corkscrew, from functional disorder manifested by tertiary contraction waves.

Curling's Ulcer—Duodenal ulcer associated with extensive burns named for Dr. T. B. Curling, English Surgeon (1811–1888).

Current, Electric—In a unit of time, the amount of charge flowing past a point.

Curvature, *n.*—A bending or flexure, as the kyphotic curvature of the thoracic vertebrae and the lordotic curvature of the lumbar region.

Curved Blount Plate—For fastening broken bones. (See illustration p. 108.)

Curved Bucky Diaphragm—One made as a segment of a circle to coincide with diverging rays of an x-ray beam.

Curvilinear, *adj.*—Consisting of, or bounded by, curved lines; a curved line.

Cushing's Disease—Pituitary basophilism, caused by a tumor of the basophilic cells of the pituitary gland, or may be related to disease of adrenal cortex.

Cuspid, *n.*—The upper and lower teeth located between the lateral incisors and the first bicuspid tooth; having a single cusp.

Cutaneous, *adj.*—Pertaining to the skin.

Cyanosis, *n.*—Deficient oxygenation of the blood resulting in bluish appearance of the skin.

Cycle, *n.*—(Of an alternating current.) The time required for the charge at any place in the circuit to attain its maximum positive charge, alternate to its maximum negative charge, and again return to its starting point.

Cyclotron, *n.*—A device invented by E. O. Lawrence,[1] physicist at Berkeley, California, for accelerating charged particles using a large electromagnet, so that the particles receive pushes that accelerate them while they are retained in spiral paths by the magnetic field. It is used for production of high energy neutrons.

Cylinder, Extension—A circular metallic attachment, of variable length, fitted with a circular diaphragm used to collimate a beam of x rays to a small area.

Cylindroma, *n.*—A tumor composed of a collection of hyaline cylinders surrounding a central dilated capillary, and themselves surrounded by round cells.

Cyst, *n.*—Any sac, especially an encapsulated collection of fluid or gas, normal or otherwise.

Cystic Disease of the Lungs—This may be due to a variety of causes including developmental, infectious and neoplastic. Blebs and bullae may be seen in the lung apices and cystic changes may accompany advanced bronchiectasis.

Cystic Duct—The tube giving passage to bile extending between the gallbladder and the common bile duct.

Cysticercosis, *n.*—Encysted larvae of Taenia solium throughout the body.

Cystic Fibrosis—Fibrocystic disease of the pancreas, other glands and lungs, probably congenital, and frequently associated with celiac disease and bronchiectasis. (See also mucoviscidosis.)

Cystic Pneumatosis of the Intestine—This condition is characterized by gas within the in-

[1] Lawrence, E. O., and Livingston, M. S.: Multiple acceleration of ions to very high speeds. *Phys. Rev.*, *45:* 608, 1934.

testinal wall to which it has obtained entrance by ulceration of the mucosa.[1]

Cystadeno—Combining form for a tumor containing both cystic and glandular elements.

Cystadenoma, *n.*—A tumor derived from glandular secreting tissues where the ducts have been locked, causing accumulation of fluid to form cysts and with preservation of the lining epithelium. Such cystic adenomas are seen in both the ovary and the breasts.

Cystitis, *n.*—Inflammation of the urinary bladder.

Cystocele, *n.*—A protrusion of the wall of the urinary bladder onto the perineum between the pubis and the vagina.

Cystogram (cystography) *n.*—A roentgenogram of the bladder after introduction of some substance of greater or lesser density than the normal tissues, such as opaque solution or air.

Cystoma, *n.*—A cystic new growth.

Cystoscope, *n.*—An instrument used for examination of the inside of the bladder. An electrically lighted tube with suitable lens system for introduction into the bladder, used for inspection of the bladder and catheterization of the ureters.

Cystoscopic Examination—Examination of the inside of the urinary bladder through a cystoscope introduced through the urethra.

Cytological Examination (Cytology)—Microscopic examination of exfoliated cells found in secretions, as from the bronchi or uterus, to determine presence of neoplastic cells. (cf. Papanicalaou Technique).

Cytomegalic Inclusion Disease[2]—Focal cerebral necroses seen in newly born and older infants followed by focal cerebral calcifications. The pattern of these calcifications is indistinguishable from that resulting from cerebral toxoplasmosis.

Cytoplasm, *n.*—Part of the protoplasm of a cell exclusive of the nucleus and various inclusions.

Cytoplasmic Inheritance—Inheritance controlled by the cytoplasm and not by the genes in the nucleus.

[1] Lerner, H. H. and Gazin, A. I.: Pneumatosis intestinalis. Its roentgenologic diagnosis. *Am. J. Roentgenol.*, *56*:464, 1946.

[2] Wyatt, J. P., Saxton, J., and Lee, R.S.: Generalized cytomegalic inclusion disease. *J. Pediat.*, *36*:271–294, 1959.

D

D.A.B.R.—Diplomate of the American Board of Radiology. An M.D. who has followed a prescribed course of post-graduate study and has passed the examinations and been certified by the Board as a Radiologist.

Dacryocystitis, *n.*—Inflammatory disease of the lacrimal glands.

Dactylitis, *n.*—Inflammation of a finger or toe.

Daily Dose—A fractional amount of x radiation given each day as part of a treatment schedule.

Dark Adapting Goggles—A type of polaroid red glasses used for partial and pre-adaptation of the eyes to darkness before fluoroscoping.

Darkroom, *n.*—A room which can be completely darkened so that x-ray or photographic films may be processed using only safe-lights.

Deamination, *n.*—Process of removing the NH^2 group from amino acids, amines and other monosubstituted ammonia derivatives.

Decade Scaler—One with a scaling factor of 10.

Decay Constant—The decay in unit time of a fraction of the number of atoms of a radioactive substance.

Decay Curve—One showing, after any time interval, the relative amount of radioactive substance remaining.

Decay, Radioactive—When the nucleus of an unstable element spontaneously emits charged particles and/or photons.

Deciduous, *adj.*—The temporary or milk teeth as distinguished from the permanent set.

Decompensation, *n.*—Failure to maintain normal function; as, decompensation of the heart.

Decontamination, *n.*—Separation of undesired radioactive substances, such as radioactive fission products from plutonium. Also, removal of such materials from surfaces, clothes, etc., where their presence may be a hazard to health or an experimental nuisance.

Decontamination Factor—Ratio between amount of undesired radioactive material present in the first place, to the amount which remains following a suitable processing step.

Decubitus, *n.*—A position for roentgenography in which the patient is recumbent. The words ventral, dorsal or lateral are employed in conjunction to describe the particular recumbent position, and the x-ray beam is directed "cross-table." Example: Left lateral decubitus implies the patient is positioned left side down.

Deep Therapy—X radiation delivered to a deep-seated lesion as by a 200 KV x-ray machine, or more powerful source such as a cobalt^{60} bomb.

Deep Therapy X-ray Tube—One designed to be used with generators of 200 KV or more capacity.

Defecation, *n.*—Discharge of fecal material from the bowel.

Deferens, Vas—An excretory duct carrying sperm from the testes.

Deformans, *adj.*—Signifying deformity or disease such as arthritis or osteitis deformans.

Deformity, *n.*—Loss of normal appearance as in Madelung's deformity of the forearm (radius curves) and Sprengel's deformity (omovertebral process) of the neck and shoulder.

Degenerative, *adj.*—Pertaining to the change of tissue to a lower or less functionally active form.

Deglutition, *n.*—Act of swallowing.

Deliquescent, *adj.*—Taking up moisture from the air.

Deltoid Muscle—A heavy muscle, triangular in shape, which overlies the shoulder.

Demi—*prefix* meaning half.

Demineralization of Bone—Loss of calcium and phosphorus salts by excessive excretion or absorption.

Dens, *n.*—The odontoid or tooth-like process of the second cervical vertebra.

Densities, *n.*—Referring to multiple radiopaque shadows within a structure such as lung, brain, or other organs.

Densitometer, *n.*—A device for determining amount of radiation delivered by exactly measuring the degree of blackening of x-ray or photographic film by the photoelectric principle.

Density, *n.*—Compactness of the structure of a substance.

Density, Decreased—A roentgenographic term used to denote a part relatively more permeable to x rays.

Density, Increased—A roentgenographic term used to denote less permeability to x rays, hence producing a whiter shadow on the x-ray film or one of less brightness on the fluoroscopic screen.

Density, Photographic—This denotes the degree of darkening of photographic film.

Dental, *adj.*—Pertaining to the teeth.

Dental Canal—Canal in the tooth structure.

Dental Caries—Decay of the teeth.

Dental Granuloma—A chronic abscess at the root of a tooth.

Dental Lamina—The lamina dura or tough structure investing the teeth.

Dentate Line—A notched or toothed line (the pectinate line) between the anus and rectum. (Also Hilton's Line).

Dentigerous Cyst—An expanded dental follicle containing fluid, and one or more teeth.

Dentine (Dentin), *n.*—The substantia eburnea, the main substance of a tooth.

Dentition, *n.*—Eruption of teeth characteristic of genus or species.

Deossification, *n.*—This refers to loss of mineral substance of a bone, also spoken of as demineralization.

Depolymerization, *n.*—An organic compound broken down into two or more less complex molecules.

Deposition, *n.*—The laying down of a substance as in the walls of a blood vessel in arteriosclerosis.

Depressed Fracture—A fracture of a flat bone in which one edge of the bone fragment is depressed below the other, as in skull fracture.

Depth Dose (Depth Tissue Dose)—A percentage of radiation delivered at depth expressed with reference to the surface dose or the air dose.

Derangement, *n.*—Disordered function or structure.

Dermatomyositis, *n.*—A disease characterized by muscular weakness, scaliness and induration of the skin, and belonging to a group of diseases spoken of as collagenoses.

Dermoid, *n.*—A tumor containing elements of skin structure.

Dermoid Cyst—A tumor containing such external elements, as teeth and hair.

Dermoid Tumor—A congenital cystic tumor, usually quite hard and filled with sebaceous matter and other dermal structures.

Descending colon—A portion of the colon which descends from the splenic flexure along the left side of the abdomen.

Desiccated, *adj.*—Dried anhydrous form of chemicals without crystalline form. (cf. Dissecans and dissected.)

-desis—*suffix*, meaning fused or binding.

Desquamation, *n.*—Shedding or exfoliation of cells from skin following x-radiation therapy. Also exfoliation of cells from mucous membranes which may be subjected to cytologic study.

Detail, *n.*—Clearness of the finer structures and visibility in a radiograph.

Detritus, *n.*—Any broken down or degenerated tissue or carious matter.

Deuterium, *n.*—A naturally occuring stable isotope of hydrogen which is also called heavy hydrogen. It has an atomic number of 1 and an atomic weight of 2, and is usually designated as D^2 rather than H^2.

Deuteron, *n.*—Nucleus of a heavy hydrogen atom.

Developer, *n.*—The solution used for development of photographic and x-ray film, consisting of: Elon and Hydroquinone, as developing, or reducing agents; sodium sulphite as a preservative; sodium carbonate, for alkalinization; potassium bromide, to prevent chemical fog.

Development, *n.*—Normal or abnormal sequence of events as in the embryonic arrangement of component parts of structures. In Radiography, the initial stage or processing of exposed film.

Developmental, *adj.*—Something which occurs during development of an individual.

Deviate, *v.*—To turn away from a prescribed course or axis.

Devitalized, *adj.*—A dead tooth, or other structure; one from which the nerve has been removed.

Dexter, *n.*—On the right side. O.D. means oculus dexter, the right eye. (cf. sinister.)

Dextrocardia, *n.*—Abnormal right-sided position of the heart.

Dextroposition, *n.*—Abnormal right-sided transposition as dextroposition of the aorta.

Diabetes Mellitus—A disease of metabolism in which excessive amounts of sugar are present in the blood and excreted in the urine. The patient usually suffers from excessive hunger and thirst and loses weight.

Diagnosis, *n.*—The art of determination of the character of a disease.

Diagnosis Indeterminate—Indefinite, not precise or distinct; vague.

Diagnosis, Roentgen—That part of the science of Roentgenology which uses Roentgen Rays (X Rays) to make a diagnosis. (Diagnostic Roentgenology)

Diagnostic Pneumothorax—Injection of air into the thoracic cavity to determine amount of fluid, presence of adhesions or other abnormalities of the lungs or pleura.

Diamagnetic, *n.*—Non-magnetic substances; such as, silver, copper, etc.

Diaphragm, *n.*—The dome-like muscular structure which forms a partition between the abdomen and chest. Also Bucky or (Potter Bucky) Diaphragm used in roentgenography to reduce secondary radiation.

Diaphragma Sellae—A membranous sheath stretched across the top of the hypophyseal fossa between the anterior and posterior clinoid processes. This is also spoken of as the tentorium of the hypophysis and is formed by a fold of the dura mater extending transversely across the sella. In the center is a perforation for the passage of the infundibulum.

Diaphragmatic, *adj.*—Pertaining to the dome-like muscular structure which forms a partition between the abdomen and the chest.

Diaphragmatic Hernia—Herniation of a portion of the stomach or other viscera through the diaphragmatic hiatus, or anteriorly, through the foramen of Morgagni, and posteriorly through the Foramen of Bochdalek.

Diaphragmatic "Leaves," Domes—The two halves of the diaphragm. Correctly, the right and left hemidiaphragm.

Diaphyseal, *adj.*—Pertaining to the diaphysis, or shaft side of an epiphyseal line.

Diaphyseal Aclasis—Multiple cartilaginous exostoses, a form of dyschondroplasia.

Diaphyseal Sclerosis—Increased condensation of bone along the shaft as distinguished from the epiphysis.

Diaphysis, *n.*—The shaft of a long bone, as distinguished from the ends or epiphyses.

Diarrhea, *n.*—Frequent loose bowel movements.

Diarthrodial Joints—Sliding joints.

Diarthrosis, *n.*—A kind of joint in which the two bones are not held firmly together, but are merely apposed and can move more or less freely upon each other.

Diastasis, *n.*—Forcible separation or taking apart of bones without fracture as at a suture.

Diastasis of the Pubic Symphysis—Spreading of the symphysis pubis during labor.

Diastatic Fracture—Separation of bones as at a suture.

Diastematomyelia,[1] *n.*—A congenital defect seen radiologically as a spina bifida involving many segments of the vertebral column.

Diastole, *n.*—The resting stage of the heart contraction and relaxation cycle, in which filling occurs.

Didelphic, *n.*—Having a double uterus.

Dielectric, *n.*—An electric insulator.

Difference of Potential—The difference of electrical pressure between two points within or outside of a circuit, or between two unconnected bodies. Measured in volts and kilovolts.

Differential Absorption Ratio—Concentration ratio of an isotope in a given organ to concentration obtained if the same administered quantity of the isotope were uniformly distributed throughout the body.

Diffraction, *n.*—Interference in wave motion by interposition of a grating or crystal causing breaking up of light or x-ray beam into its component wave lengths.

Diffraction Angle—The angle between an incident ray and any resultant diffracted beam, or the angle theta (θ)

Diffraction Grating—A grating used to cause diffraction of light or x rays, as in x-ray crystallography.

Diffusate, *n.*—Material which has passed through a barrier in the barrier diffusion separation method of uranium isotopes.

Diffusion, *n.*—Movement of molecules through a gas, liquid or solid, due to the natural motion of the molecule, which is a function of their temperature: the higher the temperature, the higher the rate of diffusion.

Digestive, *adj.*—The digestive tract or alimentary tract; also the digestive process.

[1] Neuhauser, E. B. D., Wittenborg, Martin H., and Dehlinger, Klaus: Diastematomyelia: Transfixation of the cord or cauda equina with congenital anomalies of the spine. *Radiology, 54:* 659–664, May, 1950.

Digital Markings—The beaten silver appearance of the inner table of the skull suggesting imprints of the finger tips and caused by pressure of convolutions of the brain.

Digits, *n.*—Fingers of the hand specifically in man, compared with toes of the feet. In quadrupeds, there are digits of the front and hind feet.

Dilatation, *n.*—Natural or artificial enlargement, expansion or distention of a cavity, canal, or opening.

Dilate, *v.*—To enlarge, expand or distend as with a dilator.

Dilated, *n.*—Distended or expanded.

Dilated Common Duct Sign—This is a pressure defect upon the distal portion of the duodenal bulb caused by enlargement of the common duct from pressure upon its distal end by stone, carcinoma of the pancreas or enlarged regional lymph glands.

Diode, *n.*—An electron tube which contains the two essential elements, namely a cathode and anode.

Diodrast, *n.*—A proprietary drug used for excretory urography.

Dionosil, *n.*—A proprietary drug used in bronchography.

Diplococcus, *n.*—Spherical micro-organisms arranged in pairs.

Diploë, *n.*—The porous bony tissue between the plates of the skull. Loose osseous tissue between the two tables of the cranial bones.

Diploic, *adj.*—Referring to the diploë, as diploic vessels.

Diploid, *n.*—Having the normal paired chromosomes which form following fertilization.

Direct Current—Abbr. D. C. One where the flow is continuous in one direction.

Direct Radiation—The radiation emanating from a tube aperture and comprising the useful beam as compared with any stray radiation such as may come from the tube's container.

Disc, *n.*—The cartilaginous pads between the vertebrae.

Discharge Tube—Any vacuum tube in which a high voltage electric current is discharged, such as, an x-ray tube.

Discogenic, *adj.*—Derived from derangement of intervertebral disc.

Discography, *n.*—Air injection of an intervertebral disc in order to show presence of herniation of the nucleus pulposus.

Discrete, *adj.*—Well defined and clear cut in appearance. Lesions which are not blended together.

Disintegration Constant—The fraction of the number of atoms of a radioactive isotope decaying in a unit time.

Disintegration, Nuclear—A spontaneous change in which the nucleus emits a highspeed particle

with or without a gamma ray or roentgen ray, leaving a nucleus with a different atomic number.

Dislocation, *n.*—Abnormal relationship of structures; such as, dislocation of bones of a joint.

Displacement, *n.*—Abnormal position of a structure or organ.

Dissecans, *n.*—Osteochondritis dissecans, as in the knee, representing separation or dissection of a button of bony cortex, usually from the medial condyle.

Dissecting Aneurysm—One in which the blood extravasates and dissects between the coats of an artery as a dissecting aneurysm of the aorta.

Disseminated, *adj.*—Scattered areas or points of involvement.

Distal, *adj.*—Farther away from the central portion of the body; as the distal fragment of a fracture, meaning, the fragment farthest away from the body.

Distance, *n.*—In radiography, the distance between the focal spot of the target and the film, e.g. focal-film distance.

Distend, *v.*—Stretch out; to become inflated.

Distention, *n.*—Enlargement or expansion as of a hollow viscus.

Distinctor, *n.*—A large wooden spoon or spatula used to palpate the stomach under the screen during fluoroscopy.

Distortion, *n.*—Variation from normal contour; misshapen appearance of the radiographic image, as from motion.

Disturbed Motility Pattern[1]—Described by Dr. Ross Golden as segmentation producing the so-called "moulage" or "sausage" sign with clumping. All of these changes found in association with any pathologic condition producing edema and inflammatory infiltration of the small bowel. (Also Disordered Motor Function.)

Divergence, *n.*—Radiating outward from any point source of radiation.

Diverticulitis, *n.*—Multiple diverticula with evidence of associated inflammation.

Diverticulosis, *n.*—Presence of multiple diverticula in an organ, such as the large bowel, without evidence of inflammation.

Diverticulum, *pl. -a, n.*—An outward pouching between the muscular coats of a hollow viscus, such as the colon.

Dolichocephalic, *adj.*—Having a skull with a long anterior posterior diameter; having a cephalic index of less than 80.

Dolichocephaly, *n.*—Unusually long skull.

Dolichocolon, *n.*—Abnormal length of the colon.

[1] Golden, R.: Some clinical problems in small intestinal physiology. Mackenzie Davidson Memorial Lecture. *Brit. J. Radiol., 23:* 390–408, July, 1950.

Dolichoesophagus, *n.*—Abnormal length of the esophagus.

Dominant Character (Genetics)—In a cross between a pair of contrasting characteristics the one which will appear in a hybrid is the dominant one.

Dorsal, *adj.*—Back or posterior as opposed to ventral or anterior.

Dorsal Decubitus Position—This position for an x-ray examination of the chest or abdomen, for example, is one in which the patient lies on the table supine, but the x-ray beam, is directed across the body (as for the demonstration of fluid levels and gas) instead of in the frontal or AP plane. (See also decubitus and ventral decubitus.)

Dorsal (Thoracic) Vertebrae—Vertebrae to which the ribs are attached; twelve in number.

Dorsalis Juvenilis, Osteochondritis—Undeveloped vertebrae; osteochondritis. (Calvé's[2] or Scheuermann's[3] disease).

Dorsalis Pedis—Artery in dorsal part of the foot.

Dorsolumbar, *adj.*—Pertaining to the back and the loins.

Dorsum, *n.*—The back.

Dorsum Sellae—The upstanding square plate of bone just back of the hypophyseal fossa; a part of the sella turcica to which the posterior clinoid processes are attached.

Dosage, *n.*—(x radiation.) A measure of the quantity of radiation delivered by an x-ray machine; either in time, at certain milliamperage, kilovoltage, and distance, or more accurately in *r* units of dosage.

Dose, *n.*—(Tolerance.) The amount of radiant energy which can be tolerated by the normal living tissues without apparent injury.

Dose, Fractionation—Administration of a course of x-ray therapy by dividing the total dose into a number of smaller ones, given usually at daily intervals.

Dose, Protraction—Extending the total time for delivering a given course of radiation usually at a low dosage rate to minimize reaction.

Dose Rate (Dosage Rate)—The amount of radiation delivered per unit of time.

Dose-Rate Meter—A physical device designed to measure the radiation per unit of time.

Dosimeter, *n.*—A device consisting of an ionization chamber with built-in self reading electrometer, which may be pencil size, used for measuring accumulated dosage of radiation and in personnel monitoring.

Double Contrast Enema[4]—An enema given for

[2] Calvé, J.: Localized affection of the spine suggesting osteochondritis of vertebral body, with clinical aspect of Pott's disease. *J. Bone & Joint Surg., 7:*41–46, 1925.

[3] Scheuermann, H.: Scheuermann's krankheit (Kyphosis juvenilis). *Fortschr, a.d. Geb. Roentgenstrahlen, 53:*1–16, 1936.

[4] Moreton, R. D. and Yates, C. W.: Double-contrast study of colon: Comparative study of barium sulfate preparations, *Radiology, 54:* 541–547, April, 1950.

x-ray examination in which a special thin barium sulphate mixture is injected, expelled, and then the colon is inflated with air.

Double Exposure—Two superimposed exposures on the same film.

Double Focus Tube—A tube having two focal spots; one, small for greater detail; the other, broad to permit greater energy to be applied to the tube.

Double Ureter—Having two distinct ureters on one side.

Doubling Dose—The dose of radiation that will double the mutation rate in a population.

Drosophila, *n.*—A genus of fruit flies which have been extensively employed in studies of radiation effects, particularly with relation to development of mutations.[1]

Duct, *n.*—A tube or canal, especially one carrying an external secretion from a gland.

Ductility, *n.*—The property which permits a metal to be drawn into wire.

Ductus Arteriosus—A vessel present in the fetus between the pulmonary artery and the aorta which normally becomes a fibrous cord after birth.

Ductus Deferens—A tubular structure carrying spermatic fluid from the epididymis to the prostatic urethra. (Also the vas deferens.)

Dumb-Bell Tumor—A tumor of the spinal cord, usually a neurofibroma, half of which grows outside of the spinal canal, presenting in the thorax, with the other half within the spinal canal.

Dunham's Fan[2]—Nodular strands spreading out in a radial fashion from the hilum of the lung in pulmonary tuberculosis.

Duodenal, *adj.*—Pertaining to the duodenum. (The first portion of the small intestine.)

Duodenal-Biliary—An abnormal connection between the two as a duodenal-biliary fistula.

Duodenal Bulb (or cap)—The triangular shaped structure forming the first portion of the duodenum, seen on roentgenological examination of the upper gastrointestinal tract.

Duodenal-Jejunal—A connection between the two portions of the small intestine, as a duodenal-jejunal fistula.

Duodenal Ulcer—A peptic ulcer occurring in the duodenal bulb.

Duodenitis—Inflammation of the first portion of the small intestine.

Duodenum, *n.*—The first portion of the intestine named for the number twelve, as it is approximately twelve fingers breadth in length.

Dural, *adj.*—Referring to the dura mater.

Dural Sheath—The outermost, toughest and most fibrous of the three meninges of the brain.

Dura Mater—The outermost covering of the brain.

Durand Disease—Lymphogranuloma inguinalis or venereal lymphogranuloma. (Favre-Durand-Nicola's Disease.)

Dwarfism, *n.*—Of small stature; below normal size.

Dwarf Kidney—An abnormally small or atrophic kidney.

Dye Test for Gallbladder Function—Tetraiodophenolphthalein or other iodinated compound for gallbladder visualization. Devised by Graham and Cole[3] in 1924 for opacifying the gallbladder by intravenous injection of the opaque medium.

Dynamo, *n.*—A piece of electrical apparatus, consisting of coils of wire revolving in a magnetic field; the purpose of which is to generate an electric current.

Dyne, *n.* —Unit of force. The force which will produce change of velocity of one centimeter per second in a gram mass in one second.

Dys—*prefix* meaning difficult, bad or painful.

Dyschesia, *n.*—A difficult bowel movement.

Dyschondroplasia, *n.*—(Ollier's Disease.) Disordered development of cartilaginous elements resulting in development of achondroplastic dwarf. Also, chondrodysplasia.

Dyscrasia, *n.*—An abnormal and diseased state of the blood.

Dysfunction, *n.*—Absence of completely normal function; disordered function.

Dyskinesia, *n.*—Disordered movement as in swallowing or deglutition.

Dyskinesia of the Gallbladder—A failure of the gallbladder to contract and empty after the fat meal.

Dysostosis, *n.*—Defective bone formation.

Dysostosis Cleidocranialis—Cleidocranial dysostosis.

Dyspepsia, *n.*—Disordered digestive function.

Dysphagia, *n.*—Difficult swallowing.

Dysplasia, *n.*—Abnormal development of tissue.

Dyspnea, *n.*—Difficult breathing.

Dystocia, *n.*—Difficult childbirth.

Dystopic, *adj.*—A displaced structure such as kidney. (See also ectopic.)

Dystrophic, *adj.*—Of or relating to dystrophy.

Dystrophy, (Dystrophia), *n.*—A disease occasioned by deficient nourishment. Examples are pseudohypertrophic progressive muscular dystrophy, progressive muscular dystrophy and dystrophia adiposogenitalis.

[1] Müller, H. J.: Biologic effects of radiation with special reference to mutations. *Act. Sc. Ind.*, No. 725, 477, 1938.

[2] Dunham, H. Kennon: Roentgenographic diagnosis of pulmonary tuberculosis. *Am. J. Roentgenol.*, 3:131, 1916.

[3] Graham, Evarts A., Cole, Warren, H., and Copher, Glover H.: Roentgenological visualization of the gallbladder by intravenous injections of tetrabromphenolphthalein. *Radiology*, 4:83, 1925.

E

Ear, *n.*—The organ of hearing composed of the external ear, the middle ear, and the internal ear.

Ebstein's Deformity[1]—A form of congenital heart disease marked by deformity of the tricuspid valve which may or may not be associated with a patent foramen ovale.

Eburnated, *adj.*—Changes in bone causing them to become dense like ivory and hardened.

Eburnation, *n.*—Increased density or sclerosis of bone noted especially on the margins of joints in hypertrophic forms of arthritis.

Ec—*prefix*—Out.

Ecchymosis, *n.*—Escaping of blood from the vessels into the surrounding tissues.

Echinococcus, *n.*—A genus of dog tapeworm which may cause cysts in lungs or liver. Echinococcus or hydatid cysts of the lung are derived from Echinococcus granulosus which is an inhabitant of the intestine of the dog. These cysts produce a sharply demarcated spherical shadow in the lung and may be filled with fluid.

-ectasis—*suffix*, indicating dilatation or expansion.

Ecto—*prefix*, meaning outside.

Ectoderm, *n.*—The outer layer of cells in the earliest stages of development of the embryo.

Ectodermal, *adj.*—Of or pertaining to the ectoderm.

-ectomy—*suffix*, meaning excision.

Ectopia, (Ectopy), *n.*—Displacement.

Ectopic, *adj.*—Out of proper place, such as an ectopic kidney.

Ectopic Pregnancy—Implantation of the fertilized ovum outside the normal site in the uterus, i.e., in a uterine tube or within the abdomen.

Edema, *n.*—An abnormal outpouring of clear fluid into the connective tissues from the blood stream; dropsy.

Edentulous, *adj.*—Without teeth, loss of teeth.

Edison, Thomas Alva[2]—An American inventor who devised the first practical fluoroscope using calcium tungstate as the fluorescent material. He collaborated with Michael Pupin, a physicist of Columbia University, in design and construction of the first fluorescent screens for use in a cassette.

Edison's Fluoroscope—A type of hand fluoroscope first used by Edison in 1896 in his early experiments following the discovery of x rays.

Effective Atomic Number—One calculated from the atomic numbers of a compound or mixture based on its composition.

Effective Half-Life—The half-life of a radioactive isotope in a living organism which results from the combination of radioactive decay and biologic elimination.

Effective Voltage—The average voltage effective over the period of any phase of an electric current, equals the root mean square of the variable voltage.

Effective Wave Length—The wave length which would produce the same penetration as an average of the various wave lengths in a heterogenous bundle of x rays.

Efferent, *adj.*—Indicating moving away from a structure.

Efferent Loop—Radiating from the center out to the edge. (cf. afferent) In gastroenterostomy, the portion of the bowel going away from the stoma.

Efficiency Counters—Measurement of the probability of a count being recorded when radiation is incident on a detector.

Effusion, *n.*—Fluid filling a cavity of the body.

Egg Cell (Ovum)—The female gamete.

"Eggshell" Calcification—A thin layer of calcium deposited in the walls of a structure such as a cyst. Also a type of calcification seen in hilar glands associated with the pneumoconioses.

Eisenmenger Complex[3]—A form of congenital heart disease in which there is a high ventricular septal defect, dextro position of the aorta and dilatation of the pulmonary artery, associated with cyanosis, clubbing of the fingers and sometimes hemoptysis. (cf. tetralogy of Fallot.)

Ejaculatory Duct—A tube from the ejaculatory glands emptying into the prostatic urethra.

Elbow, *n.*—The joint between the humerus and the radius and ulna.

Elbow Trochlear Prosthesis (Wade)—A metallic attachment for the elbow. (See chart on page 109.)

Electric Current—A flow of negative electrons from negatively charged atoms in response to a tendency to produce stable atoms of neutral charge.

Electric Induction—The induction of an electric charge which takes place in a conductor of electricity when subjected to an electric field.

Electricity, *n.*—Flow of a current of energy

[1] Ebstein, W.: Ueber einen sehr seltenen fall von insuffizienz der valvula tricuspidalis bedigt durch eine angegorene hochgradige missbildung beiselden. *Arch. f. Anat. u. Physiol.*, p. 238, 1866.

[2] Fuchs, Arthur W.: Edison and roentgenology. *Am. J. Roentgenol. & Rad. Ther., 52:2*, Feb. 1947.

[3] Eisenmenger, V.: Die angeborenen Defecte der Kammerscheidewand des Herzens. *Weit. f. klin. med.. 32:* Supp. Heft I.:1-28, 1897.

through a conductor caused by motion of electrons.

Electro—A combining form coming from the Greek word for amber, a substance having the property of accumulating static charges when rubbed with wool. It means of or pertaining to electricity, electronics or any of the forces involved in producing electrical phenomena.

Electrode, *n.*—A terminal of a conductor of electricity, usually of metal or carbon.

Electromagnet, *n.*—A magnet produced in a core of iron by an electric current passing through coils of wire wound around it. This can be turned on and off unlike a permanent magnet.

Electromagnetic Field—The magnetic field produced about an electromagnet.

Electromagnetic Induction—Law of Magnetic lines of force extending at right angles from a conductor of electricity, inducing an electric current in that conductor.

Electrometer (Electroscope), *n.*—A device for measuring difference or observing the deflection of a gold or aluminum leaf or metallized quartz fiber. In radiation measurements, it may be connected with an ionization chamber to give a measure of roentgen rays or other ionizing radiation.

Electrometer Tube—A specially designed vacuum tube having a high input impedance and low grid current.

Electromotive Force—The pressure of electrical charge, or voltage. The difference in potential across electrodes which tend to make an electric current flow, and is measured in volts. Abbreviation e.m.f.

Electron, *n.*—A small negatively charged body forming part of the atomic structure which revolves about the positively charged nucleus of the atom like the earth and planets revolve about the sun.

Electron Beam—A stream of electrons emanating from the heated filament of an x-ray tube which strike the focal spot on the anode and produce x rays.

Electron Capture—In a mode of radioactive decay when an orbital electron is captured by its nucleus, this may be designated as *K* or *L*-electron capture, depending upon the particular electron shell.

Electron Multiplier Tube—One in which small electron currents can be amplified through a cascade process.

Electron Tube—(Lenard tube)—A vacuum discharge tube of special design so that the electron stream is projected outside the tube into the atmosphere. Other types of these highly evacuated tubes were those of Geissler, Hittorf and Crookes.

Electron Volt (ev)—The amount of energy required to move one electronic charge through a difference of potential of 1 volt. This is equal to 1.6×10^{-12} erg, the kinetic energy of a hydrogen atom travelling at about 550 miles a minute.

Electroscope, *n.*—An instrument for the detection of small charges of electricity. The most common type consists of a gold leaf attached to a metal rod suspended by an insulating support in a glass jar. Charging the rod causes the gold leaf to be repelled and to stand out at an angle.

Electrostatic Field—A field of attraction around an electric charge in which another charge experiences a force.

Electrostatic Unit of Charge (Statcoulomb)—A quantity of electric charge which will, when placed in a vacuum 1 cm. distance from an equal charge, repel it with a force of 1 dyne. Abbreviated: ESU.

Electrostatic Voltmeter—A highly specialized piece of electrical apparatus for the accurate measurement of high voltage charges.

Element, *n.*—A rudimentary pure substance; the ultimate parts of which anything is composed. Consists entirely of atoms of the same atomic number.

Element Specific Activity—Ratio of the active to total isotopes of any element in question, measured in curies per gram of the element.

Elevation, *n.*—Raising a structure as the diaphragm above its normal position.

Elon, *n.*—One of the ingredients in developing solution.

Elongated, *adj.*—Stretched out, protracted.

Elongated Aorta—Lengthened or tortuous.

Em, En,—*prefixes*, meaning in.

Emanation, *n.*—A gaseous element; degeneration product of radium resulting from the emission of an alpha particle; radon.

Embolism, *n.*—The process by which a portion of a blood clot (or bubbles of air, globules of fat, or pus) is dislodged and carried through the blood stream to a distant part or organ such as the brain or lungs.

Embolus, *n.*—A fragment of a blood clot or bubble of air, globule of oil, fat or pus occluding a blood vessel.

Embryo, *n.*—The earliest period of development of an organism.

Embryological, *adj.*—Pertaining to the study of embryology.

Embryology, *n.*—The study of the development of the embryo.

Embryoma, *n.*—A tumor derived from embryonal structures.

Embryonal, *adj.*—Pertaining to the embryo.

Embryonic, *adj.*—Of or pertaining to the embryo.

-emia, *suffix*—Pertaining to blood.

Eminence, *n.*—An elevation of prominence usually on the surface of a bone as the arcuate eminence of the petrous ridge of the temporal bone just above the semicircular canals.

Eminentia Arcuata—The arcuate eminence on the petrous ridge of the temporal bone just above the semicircular canals.

Eminentia Articularis (articular tubercle)—A rounded prominence of bone just anterior to the temporo-mandibular joint.

Emissary, *n. or adj.*—An outlet or means of connection between two parts as the emissary veins.

Emissary Veins—Vessels communicating between the circulation on the inside and outside of the cranial cavity, via small foramina.

Emphysema, *n.*—Overdistention of the tissues with air. Pulmonary,—overdistention of air sacs with air. Subcutaneous,—distention of subcutaneous tissues with air.

Emphysema, Mediastinal—Air gaining entrance into the mediastinum through rupture of the esophagus or trachea, or it may be seen occasionally as a complication of Pertussis.

Emphysema, Obstructive—This occurs with a foreign body lodged in an air passage because of the ball valve action allowing ingress but preventing egress of air from the involved lobe or segment.

Emphysematous, *adj.*—Distention of tissues by gas or air.

Emphysematous Blebs—Small cysts or sacs in the lungs distended with air and indicative of pulmonary emphysema.

Empyema, *n.*—Pus in the pleural cavity.

Empyema, Encapsulated—Walling off of an empyema cavity by pleura.

Emulsion, *n.*—(Photographic.) The chemical coating of photographic plate or film, sensitive to radiation. It consists of the halides of silver; bromide, chloride, and iodide.

Emulsion, Nuclear—One specially prepared on photographic film to permit observation of individual tracks produced by ionizing particles as in a cloud chamber.

Enameloma, *n.*—A tumor of the hard substance covering the teeth or the substantia adamantina.

Encapsulated Pleural Fluid—Enclosing of a pleural effusion as by pleural adhesions between the visceral and parietal pleura.

Encapsulation, *n.*—Walling off fluid or pus by pleural adhesions.

Encephalitis, *n.*—Inflammation of the brain or cerebrum.

Encephalocele, *n.*—An artificial protrusion of the membranes of the brain through the skull.

Encephalogram, *n.*—Films made of the skull after intraspinal injection of air. (Same as pneumoencephalogram.)

Encephalography, *n.*—Roentgenographic examination of the skull after withdrawal of spinal fluid and replacing it with air.

Encephalomyelitis, *n.*—Inflammation of the brain and spinal cord.

Encephalotrigeminal Angiomatosis[1] — Sturge-Weber's syndrome, characterized by irregular cerebral calcifications and port-wine stains or nevi on the ipsolateral side of the face.

Enchondroma, *n.*—A benign tumor composed of cartilage, most often found in the small bones of the hands and feet.

Enchondromatosis, Osseous (Chondrodysplasia)—Ollier's disease in which there are generalized enchondromata involving principally the metacarpals, metatarsals, phalanges, the radius and the ulna, sometimes on only one side of the body as in Ollier's original description.

Encroachment, *n.*—Invasion of one tissue by another; pressure of one part upon another.

Encysted Fluid—Surrounding by a membrane.

End—Prefix, meaning within.

Endarteritis Obliterans—Occlusive disease of the peripheral blood vessels especially of the lower extremity. (Buerger's Disease.)

Endobronchial, *adj.*—Within a bronchus as endobronchial tuberculosis.

Endocardial, *adj.*—Pertaining to the lining membrane of the chambers and valves of the heart.

Endocarditis, *n.*—Inflammation of the endocardium, or lining of the cavities of the heart.

Endocardium, *n.*—The lining of the cavities of the heart.

Endocrine Glands—Ductless glands, such as, the pituitary, thyroid, thymus, etc.

Endocrine Secretion—The internal secretion of the ductless glands.

Endocrinopathy, *n.*—A disease marked by disorders of the endocrine glands.

Endoderm, *n.*—The innermost layer of cells in a developing embryo from which the intestinal tract develops.

Endodermal, *adj.*—Of or pertaining to the endoderm.

Endodermal Cyst—One containing endodermal cells.

Endoergic Reaction—One in which energy is absorbed.

Endometrial, *adj.*—Pertaining to the lining membrane of the uterus.

Endometriosis, *n.*—Ectopic implantation of endometrial tissue within the myometrium or within the abdominal cavity.

[1] Green, J. R.: Encephalo-trigeminal angiomatosis. *J. Neuropath. & Exper. Neurol., 4:* 27–42, Jan. 1945.

Endometrium, *n.*—The lining membrane of the uterus.

Endosteal, *adj.*—Pertaining to the lining of the marrow cavity of a bone.

Endosteal Proliferation—Overgrowth of endosteal cells resulting in narrowing of the marrow cavity on the inner aspect of the cortex.

Endosteum, *n.*—The fibrous lining of the medullary cavity of the bones.

Endothelial Myeloma—Ewing's sarcoma (lympho-endothelioma). The cells of this tumor are derived from the endothelium of lymph spaces of bone.

Endothelioma, *n.*—A new growth arising from endothelial tissue. Ewing's endothelioma is a malignant tumor of bone.

Endothelium, *n.*—A layer of flat cells which line serous cavities, blood vessels and lymphatic channels.

Endothermic Reaction—One in which energy is absorbed specifically in the form of heat.

End Plates—The bony cortex on the superior and inferior surfaces of each vertebral centra or body.

Enema, *n.*—Injection of fluid solutions into the large bowel. In roentgenologic examination, a suspension of barium is given as an enema to outline the large bowel.

Energy, *n.*—A physical property of matter, it is transmitted from one body to another whenever one performs work on the other. Potential E., possessing the possibility of doing work; a weight raised to a height, possesses potential energy. Kinetic E., that possessed by a mass in motion as gm. $-cm.^2/sec.^2$, or erg.

Energy Dependence—Spoken of radiation detector with reference to quality of radiation it is designed to measure, when compared with the response of a standard open-air chamber.

Engelmann's Disease[1]—Progressive diaphyseal dysplasia.

Enlargement, *n.*—An organ having measurements larger than normal, as of the heart.

Enophthalmos, *n.*—Retraction of the eyeball into the orbit, the opposite of proptosis and exophthalmos.

Enostosis, *n.*—A bony tumor within a bone resembling a dense bone island.

Enriched Material—A substance in which the relative amount of one or more isotopes of a constituent has been increased or uranium in which the U235 isotope has been increased above normal.

Enrichment Factor—This is the quotient of two ratios: The ratio of the concentration of a given desired isotope to the concentration of the other isotopes in the product-mixture divided by the corresponding ratio in the initial mixture.

Ensiform Process (xiphoid)—The small triangular bony segment forming the lower end of the sternum.

Enteritis, *n.*—Inflammation of the lining membrane of the intestine.

Enterocolostomy, *n.*—Operative formation of a passageway between the small intestine and the colon.

Enterogenous, *adj.*—Derived from or originating in the intestine.

Enterogenous Cyst—Synonymous with duplication of the intestine.

Enterostomy Stoma—An opening between the intestine and another viscus, as the stomach.

Enzyme, *n.*—An organic substance, often a protein, secreted by body cells, acting as a ferment or catalyzer accelerating transformations of material such as in the digestive process.

Eosinophil, *n.*—One of the white blood cells which stains readily with eosin, an acid stain.

Eosinophilic Adenoma—An enlarged gland easily stained by eosin, as the pituitary gland in acromegaly.

Eosinophilic Granuloma—A rare condition of unknown etiology which clinically and roentgenologically closely resembles a malignant bone tumor, but which is benign and can be cured by either operation or radiation therapy. Also may occur in the stomach and duodenum.

Eosinophilic Pneumonitis—Loeffler's pneumonia.

Ependymoma, *n.*—A tumor of the ependyma arising within the ventricles of the brain.

Epi—*Prefix*, meaning upon or in addition to.

Epiarticular Osteochondromata — (Osteomatoses.) These tumors originate on the joint surface and have a tendency to become broken off at their bases and become loose joint bodies or "joint mice".

Epicardia, *n.*—That portion of the esophagus which passes through the diaphragm into the stomach.

Epicardial, *adj.*—Pertaining to epicardia.

Epicardium, *n.*—The inner or visceral layer of the pericardium.

Epicondyles, *pl.*, *n.*—The prominent bony processes at the lower end of the humerus, just above the elbow joint; these are medial and lateral.

Epidermis, *n.*—The cuticle or outer epithelial portion of the skin.

Epidermoid, *n.*—(Epidermoidoma.) A tumor containing epidermal elements, cystic in nature, which presses upon and erodes the bone of the skull, (cf. cholesteatomata).

Epididymis, *n.*—Tortuous tubules carrying semen from the testes to the vas deferens.

[1] Engelmann, G.: Ein fall von osteopathia hyperostotica (Sclerotisans) multiplex infantilis. *Fortschr. a. d. Geb. d. Röntgenstrahlen, 39:* 11-1-1106, June, 1929.

Epidural, *adj.*—Above or outside of the dura as the epidural space.

Epidural Hematoma—A collection of blood in clots between the dura mater and the inner table of skull. (Also extradural.)

Epigastrium, *n.*—Region over the "pit" of the stomach, and beneath the xiphoid process in the inverted V formed between the sloping costal cage on either side.

Epiglottis, *n.*—Flat cartilaginous projection extending above the opening of the trachea to guard from entrance of food during deglutition.

Epilate, *v.*—Removal of hair.

Epilation (Depilation), *n.*—Temporary or permanent loss of hair, which can be caused by sufficient doses of radiation, sometimes used in the treatment of ringworm of the scalp.

Epilation Dose—Amount of x rays applied to scalp and head which will cause the hair to fall out.

Epilepsy, *n.*—A disease of the brain characterized by convulsive seizures, and periods of unconsciousness.

Epiloia, *n.*—Marked by hypertrophic sclerosis of the cerebral cortex with nodular swelling extending to the floor of the lateral ventricle associated with adenoma sebaceum and growths in the kidneys and sometimes also in the spleen and lungs.

Epinephrine, *n.*—The active secretion from the medulla of the adrenal glands.

Epiphrenic, *adj.*—Situated above the diaphragm as, for example, diverticula.

Epiphyseal, *adj.*—Pertaining to or of the nature of an epiphysis. Also epiphyseal ring or line.

Epiphyseal Coxa Magna—Hypertrophy of femoral head and neck.

Epiphyseal Coxa Plana—Juvenile deforming osteochondritis.

Epiphyseal Coxa Valga—Curvature of neck of femur with thigh in abduction associated with bowed legs.

Epiphyseal Coxa Vara—Deformity of the hip joints resulting from epiphysitis of the capital epiphysis, and causing adduction of thighs.

Epiphyseal Separation—Abnormal separation of the epiphysis from the shaft, usually from injury (trauma).

Epiphysis, *n.*—The portion of a long bone developed from a separate center of ossification distinct from that of the diaphysis from which it is separated by a layer of cartilage.

Epiphysitis, *n.*—Inflammation of an epiphysis.

Epiploic, *adj.*—Pertaining to the great omentum as the epiploic vessels.

Epiploica, *n.*—The great omentum.

Epispadias, *n.*—Opening of the urethra on the dorsum of the penis.

Epistaxis, *n.*—Nose bleed.

Epistropheus, *n.*—The axis or second cervical vertebra.

Epithelial Cyst—A cyst lined with epithelium and containing secretion from its cells.

Epithelial Odontoma—A tumor containing tooth-like structure or tissue homologous with dental tissue, i.e., enamel, cementum, and dentin.

Epithelioma, *n.*—Cancer of the skin of either the squamous or basal cell type.

Epithelium, *n.*—The layer of cells covering a surface, such as the skin.

Epitrochlear Foramen—An inconstant circular opening in the olecranon fossa.

Epituberculosis, *n.*—This is a nonspecific reaction of pulmonary tissue around a tuberculous focus not in itself directly related to the tubercle bacillus and believed to be possibly allergic.[1]

Eponym, *n.*—Surname of an individual, so intimately associated with anything e.g., a disease, as to be figuratively the designation for it. Ex: Pott's Disease = Tuberculosis of the spine.

Epulis, *n.*—A fibrous tumor involving the gum and periosteum of the jaw.

Equilibrium, *n.*—A state of balance between two forces.

Erect, *adj.*—Upright or vertical.

Erg, *n.*—The amount of work done when a force of 1 dyne acts through a distance of 1 cm., constituting a unit of work.

Ergot, *n.*—A drug used to stimulate uterine contractions.

Erosion, *n.*—Necrosis of the edge of a solid structure; such as bone, caused by local action of infection or wearing process.

Erosive Gastritis—Superficial erosions of the mucous membrane of the stomach associated with gastritis.

Eructation, *n.*—In individuals having aerophagia and a large collection of gas in the fundus, eructation occurs with expulsion of the gas. Also belching.

Erythema Dose—Amount of x rays applied to the skin which will cause reddening in 7 to 10 days. This dose varies with quality of the radiation.

Erythema Nodosum—An acute inflammatory skin disease marked by tender red nodules and which may cause hilar adenopathy.

Erythroblastic Anemia—Mediterranean or Cooley's anemia with roentgen changes seen usually in the skull and hands.

Erythroblastosis Fetalis—A severe anemia of the

[1] Eliasberg, H. and Neuland, W.: *Jahrb. f. Kinderh.*, Berlin *94*:102-118, 1921.

newborn manifested by jaundice and due to incompatibility of Rh factor.

Erythrocyte, *n.*—A red blood corpuscle.

Esophageal Displacement—Pressure upon the barium filled esophagus may be demonstrated fluoroscopically and radiographically in such conditions as cardiac chamber enlargements, anomalies and aneurysms of the aorta, mediastinal tumors, spinal deformities and diaphragmatic hernia.

Esophageal Ring—A lower esophageal ring recognized radiologically as a shelf-like indentation of the vestibule of the esophagus and also described as the Schatzki ring.[1]

Esophageal Varices—Enlarged and tortuous veins which may be demonstrated radiographically and frequently associated with portal cirrhosis.

Esophagitis, *n.*—Inflammation of the lining membrane of the esophagus.

Esophagogastric Junction—The cardioesophageal junction where the esophagus empties into the cardiac portion of the stomach.

Esophagojejunal,—An anastomosis between the esophagus and the jejunum after removal of the stomach and the part of the duodenum.

Esophagoplastic Procedures—Operative procedures on the esophagus and stomach performed after removal of a portion of the organs for carcinoma.

Esophagram, *n.*—Roentgenographic visualization of the barium filled esophagus studied both fluoroscopically and radiographically.

Esophagus, *n.*—The muscular tube which conveys food from the pharynx to the stomach.

Ether, *n.*—A medium which theoretically prevades all space, serving as a means for transmission of radiation, such as light, x rays, and gamma rays. Also a drug used for inhalation to produce general anesthesia.

Ethmoidal, *adj.*—Pertaining to the ethmoid cells or sinuses.

Ethmoid Bone—The sieve-like bone forming the roof of nasal cavity, housing the ethmoid cells.

Ethmoid Sinuses—The air cells in the superior portion of the nasal cavity and part of the ethmoid bone.

Etiology, *n.*—Cause of a pathological state or disease.

Etter's Line (Oblique Orbital Line)[2]—In the PA and PA oblique (Water's view) of the skull, a thin line of increased density extending from the lateral orbital area, downward and medially a varying distance; a composite cross-section of the squamozygomatic surface of the greater wing of the sphenoid bone and the temporal surface of the frontal bone.

Eugenics, *n.*—The science which deals with being well born by selecting qualities in the parents to improve the hereditary quality of the offspring.

Eutonic (Orthotonic) *n.*—The average, normal position of the stomach with the duodenal bulb on a level with the incisura angularis in the upright position. (cf. hypertonic, hypotonic, atonic) (See also sthenic, hypersthenic, hyposthenic, asthenic).

Eventration, *n.*—Act of disemboweling; an abdominal tumor into which the intestine protrudes; ventral hernia.

Eventration of Diaphragm—Unusually high position or elevation of a hemidiaphragm.

Eversion, *n.*—Outward rotation.

Evert, *v.*—To turn outward.

Ewing's Tumor—A malignant new growth of bone, also called Ewing's Endóthelioma and characteristically having a symmetrical periosteal elevation in layers giving it an "onion-skin" appearance. Codman's triangle may often be demonstrated near the margins of this periosteal elevation.

Ex—*Prefix*, out or away from.

Exacerbation—Increase in the severity of any symptom or disease.

Excretion, *n.*—The separation and throwing off of waste products of the body by glandular action, or other means.

Excretory Urography—Visualization of the kidneys and ureters following intravenous injection of an opaque medium. (Also spoken of as IVP, but this is a less desirable term.)

Exenteration, *n.*—(1) Evisceration, (2) Removal of viscera of fetus by embryotomy, (3) Removal of mastoid cells.

Exfoliate, *v.*—To desquamate or shed as scales or particles of skin or mucous membrane.

Exhalation, *n.*—The act of emitting air from the lungs; to expire or exhale.

Exit Dose—Amount of radiation which is not absorbed but passes through the part of a structure irradiated on the side opposite to the entering beam.

Exoergic, *n.*—Anything liberating energy.

Exomphalos, *n.*—Herniation of the umbilicus or umbilical hernia.

Exophthalmos, *n.*—Protrusion of the eyeballs from their sockets as in toxic or exophthalmic goiter.

Exostosis, *n.*—An outgrowth of bone. (cf. Enostosis.)

[1] Schatzki, Richard and Gary, J. E.: Dysphagia due to a diaphragm-like localized narrowing in the lower esophagus—"lower esophageal ring," *Am. J. Roentgenol. & Rad. Ther., 70:* 911–22, Dec. 1953.

[2] Etter, L. E.: Detailed roentgen anatomy of the orbits. *Radiology, 59:*4, 489–503, Oct. 1952.
idem.: New method for roentgen anatomical study of the skull. *Radiology, 53:*394–402, Sept. 1949.
idem.: *Atlas of Roentgen Anatomy of the Skull.* Springfield, Illinois, Charles C Thomas, pp. 137–143, 1955.

Exothermic, *adj.*—Energy liberated specifically as heat.

Expiration, *n.*—Blowing air out; act of exhaling.

Expire, *v.*—To breathe out; to exhale, opposed to inspire. To die.

Exposure, *n.*—The subjection of sensitized film to the effects of light or x rays.

Exposure Meter—An especially designed ionization chamber as a pocket dosimeter to record directly, in milliroentgens, cumulative exposures to x radiation. (See also Victoreen and meter.)

Exposure Timer—A synchronous or impulse timer mechanism on the control panel of an x-ray machine to regulate time of exposure.

Exstrophy, *n.*—A congenital deformity consisting of eversion or turning out of a hollow organ such as the urinary bladder.

Extend, *v.*—To straighten out; the opposite of flex.

Extension, *n.*—Straightening out of the part; opposite of flexion.

Extensor Muscle—One which by its contraction causes extension of a part.

External, *adj.*—Outside.

External Acoustic Meatus—The external meatus of the ear.

External Canthus of the Eye—The outer canthus or commissure of the eye.

External Occipital Protuberance—A prominent eminence on the posterior portion of the occipital bone. Also called the inion.

External Rotation—Rotating a part away from the median plane and opposite of internal rotation.

Extra- *prefix*—meaning on the outside.

Extra Arachnoid Injection—A situation where the opaque medium has been injected outside of the subarachnoid space and is usually subdural.

Extracalyceal Extravasation—Leakage of the opaque medium into the parenchyma of the kidney in retrograde urography.

Extracapsular, *adj.*—Fracture outside the capsule. Also a term applied to anything outside a capsule as of the kidney, spleen or adrenal.

Extradural, *adj.*—(1) On outer side of the dura mater, between it and the skull, (2) Unconnected with dura mater.

Extradural Hemorrhage—Collection of blood and clots between the dura and inner table of the skull. (Same as epidural.)

Extraperitoneal, *adj.*—Outside of the peritoneal cavity.

Extrapolate, *v.*—To project, by observing the changes in a variable, the probable values that can be expected.

Extrapolation, *n.*—The expected course a set of variables will take, depending upon previously observed variability.

Extrapolation Ionization Chamber—One having electrodes with adjustable spacing, accurately determined to permit extrapolation of a reading to zero chamber volume.

Extrarenal, *adj.*—Something outside of or not intimately associated with the kidneys.

Extrarenal Pelvis—Spoken of a renal pelvis projecting outside the kidney parenchyma.

Extratracheal Masses—Those seen external to the trachea as, for example, substernal thyroid or goiter.

Extrauterine, *adj.*—Outside of the uterus.

Extrauterine Pregnancy—One occurring outside the uterus e.g. in a Fallopian tube or within the abdominal cavity.

Extravasation, *n.*—The escaping of blood, or other body fluids, from their natural channels into the surrounding tissues. Also leaking of injected material as from a vein or artery.

Extravesical, *n.*—Something outside of or not intimately connected with the urinary bladder.

Extremities, *n.*—The arms and legs.

Extrinsic, *adj.*—Having origin outside the structure, or organ involved.

Extrophy, *n.*—A displacement of the urinary bladder representing a congenital anomaly which may be recognized by wide separation of the innominate bones at the pubic symphysis where the bladder opens at the anterior abdominal wall.

Exudate, *n.*—Material poured out from the blood vessels and tissues in response to damage from injury or disease.

Exudation, *n.*—Morbid oozing of fluids usually the result of inflammation.

Exudative, *adj.*—Having the property of exudation, or morbid oozing of fluids resulting from inflammation.

Exudative Process, Acute—An inflammatory reaction such as pneumonia, or active tuberculosis in the lungs causing outpouring of tissue fluids, phagocytes, antitoxins and lymph to combat infection.

Eye, *n.*—The organ of sight lying in the bony orbit.

F

Fabella, *n.*—One of two sesamoid bones or fibrocartilages of the gastrocnemius muscle head, situated in the lateral portion of the knee. It may be mistaken for a joint mouse on a roentgenogram.

Facet, *n.*—A small smooth area or face on a bone or other hard surface.

Faceted, *adj.*—A smooth surface or face as on faceted gallstones.

Facial, *adj.*—Pertaining to the face or facial bones as distinguished from the visceral skull. (cf. fascial which refers to fascia.)

Facial Angle—One between the slope of facial bones and line between the alveolus and foramen magnum at its anterior margin.

F.A.C.R.—Fellow of the American College of Radiology. American honorary degree conferred by the college indicative of certain attainments.

Fahrenheit, *n.*—(F) A scale for the recording of temperatures. The freezing point is 32°F. and the boiling point is 212°F. Named for the German physicist Gabriel D. Fahrenheit.

Failure, *n.*—Spoken of in relation to decompensation of the heart or heart failure.

Fallopian Tubes—The oviducts are parts of the female pelvic organs. They extend from the upper ends or cornua of the uterus outward on either side to the ovaries and serve as a passage between these parts. Named for Gabriel Fallopius, Italian Anatomist, pupil of the great Vesalius.

Falx, *n.*—A sickle-shaped partition of dura mater between the cerebellar and cerebral hemispheres; any sickle-shaped structure.

Falx Cerebelli—A small sheet of dura mater projecting upward and forward and separating the lobes of the cerebellum. (cf. tentorium cerebelli.)

Falx Cerebri—The falciform process of thick membrane in the great longitudinal fissure dividing the cerebral hemispheres.

Familial—Pertaining to or common to the same family.

Familial Hemolytic Icterus (Fibrocytic Anemia)—Roentgenographically, the skull in this disease appears oxycephalic and there may be increased distance between the orbits producing hypertelorism.

Fanconi's Syndrome—A macrocytic type of anemia of early life occurring in members of the same family who also show microcephaly, pigmentation of the skin and retarded growth similar to familial hypoplastic anemia.

Farad, *n.*—Named for Michael Faraday, English physicist, inventor of the induction coil. A farad is the unit of capacitance of a condenser.

Farmer's Lung—This is a syndrome resembling that of asthmatic bronchitis caused by an organic dust mixture, particularly wheat dust, and produces, roentgenographically, intensification of the bronchovascular trunks and often associated soft nodular clouding of the lung fields. With chronic exposure, there may be a fine miliary type of nodulation scattered throughout all zones of both lung fields. (Same as Thresher's Disease.)

Fascia, *n.*—(1) A fibrous membrane covering, supporting and separating muscles, (2) A band uniting the skin to underlying tissue.

Fascial, *adj.*—Pertaining to or of the nature of fascia. (cf. facial.)

Fat Embolism—This is a complication occasionally occurring following fractures and usually shows up as either brain or lung complications several hours to several days following the injury. An embolus of oil or fat causes occlusion of a blood vessel.

Fat-Free Meal—A meal containing no fatty food, used to prevent emptying of the gallbladder by stimulation of biliary system during cholecystography or cholangiography.

Fat Meal—A meal or proprietary drink such as Bilevac, Cholex, or Cholestim, containing fat used to empty the gallbladder in the Graham gallbladder test. Also spoken of as the Boyden Meal, for Edward A. Boyden, Professor of Anatomy at University of Minnesota who devised it.

Fat Pads[1]—Spoken of usually in relation to the pericardium, as a fat pad at the apex of the heart or an epipericardial fat pad in the right cardiophrenic angle. (See also epipericardial fat pads, pericardial and celomic cysts.)

Faucial, *adj.*—Pertaining to the throat or fauces; the faucial tonsils.

Faucial Pillars—The walls or folds covered with mucous membrane situated in front and back of the faucial tonsils.

Favre Disease—Lymphogranuloma inguinalis or venereal lymphogranuloma. (Favre-Durand-Nicolas Disease.)

Feather Analysis—For N. Feather (1938) who developed a technique for the determination of the range of beta particles of a radio-element in aluminum by comparison of the absorption curve with that of a reference radio-element such as bismuth.

Febrile, *adj.*—Pertaining to, accompanied by, or indicating fever.

Fecal, *adj.*—Pertaining to feces.

Fecalith, *n.*—Small calculous deposit within the intestine or in the appendix; a coprolith.

[1] Holt, J. F.: Epipericardial fat shadows in differential diagnosis. *Radiology, 48:* 472–479, May, 1947.

Feces, *n.*—The waste product of food digestion in the intestines.

Felon, *n.*—An infection in the subcutaneous space of a terminal phalanx which may involve the bone resulting in osteomyelitis. Vernacular term: Whitlow.

Femoral—Pertaining to the thigh bone or femur.

Femur, *n.*—The large bone of the thigh.

Ferguson's Angle—The relationship of the superior surface of the sacrum to a horizontal line which should not exceed 34 degrees.

Fertilization, *n.*—Fecundation. The union of the male and female gametes.

Fetal, *adj.*—Pertaining to the embryo or fetus.

Fetal Lobulation—Outline of kidney showing persistence of the lobules present in the embryo.

Fetometry, *n.*—Measurement of the dimensions of the fetus particularly of the fetal head.

Fett Navicular Balls—Metallic balls used as replacement for the navicular bone. (See chart on page 109.)

Fetus, *n.*—The embryo; the unborn child.

Fibers, *n.*—An elongated or tenuous cell forming a slender thread.

Fibril—A fiber.

Fibrillation, *n.*—Disordered action of the heart in auricular or ventricular fibrillation.

Fibrin, *n.*—A whitish, insoluble protein formed from fibrinogen, essential portion of a blood clot.

Fibrocalcareous, *adj.*—Fibrous and calcific infiltration of the lungs in tuberculosis.

Fibrocystic Disease—Affects principally the lungs, characterized by production of fibrous tissue and the formation of cysts. (cf. Fibrocystic disease of the pancreas and mucoviscidosis.)

Fibroexudative, *adj.*—A form of tuberculosis marked by soft exudative as well as fibrotic elements.

Fibroid, *n.*—Fibromyoma of the uterus.

Fibroid Tuberculosis—A form of chronic reinfection phase pulmonary tuberculosis marked by productive elements as distinguished from exudative ones and usually a relatively inactive stage of the disease.

Fibrolipoma, *n.*—A benign tumor composed of fibrous and fatty tissue.

Fibroma, *n.*—A benign tumor of fibrous tissue origin.

Fibromyoma, *pl. -ta, n.*—(Fibroid.) A benign tumor, usually of the uterus.

Fibro-Osteoma, *n.*—A tumor composed of both fibrous and osseous elements.

Fibrosarcoma, *n.*—A malignant tumor composed principally of fibrous tissue elements.

Fibrosis, *n.*—The replacement of normal tissue with fibrous tissue. Interstitial fibrosis refers to excessive production of fibrous tissues in the interstices of the lungs.

Fibrotic, *adj.*—Marked by or pertaining to fibrosis.

Fibrotic Fold—A fold of fibrous tissue such as a pleural adhesion.

Fibrous, *adj.*—Composed of fibers as in fibrous connective tissue.

Fibrous Dysplasia.[1]—A disease of unknown etiology manifested principally by changes in the bones of the skull and other parts, and having polyostotic and monostotic forms.

Fibula, *n.*—The smaller of the two bones of the leg.

Fictitious Polyps[2]—These are usually droplets of oil introduced on the enema tip or by mineral oil taken internally and simulate the appearance of true polyps of the colon.

Fiedler's Myocarditis—A toxic mild carditis in which the heart enlarges rapidly with the production of either "lively" or "flabby" pulsations.

Field Magnet—A magnet used to produce a magnetic field for the rotation of another electromagnet in the function of a motor or dynamo.

Field Size—The area and shape of the portion of the body to be irradiated.

Filament, *n.*—A tungsten wire in the cathode of an x-ray tube serving as the source of electrons when heated to incandescence by the filament transformer.

Filament Current—A separate electric current flowing through the filament to heat it to incandescence and supplied by the filament transformer.

Filament Transformer—A step-down transformer which produces a small voltage but a relatively high amperage for heating the filament of the cathode of an x-ray tube.

Filament Voltage—Low voltage applied to the filament from an x-ray or electronic tube or transformer.

Filiform, *adj.*—Thread shaped.

Filling Defect—This is a subtracting lesion or mass displacing opaque medium as in a hollow viscus. Such a defect may also be seen silhouetted against a gas shadow as in the stomach bubble where gastric carcinoma may be demonstrated.

Film, *n.*—Photographic or x-ray. A piece of celluloid coated with a photographic emulsion consisting of the halides of silver.

Film Badge—An especially designed carrier for

[1] Lichtenstein, Louis: Polyostotic fibrous dysplasia. *Arch. Surg.*, *36*:874–898, May, 1938.

[2] Moreton, R. D., Stevenson, C. A., Yates, C. W.: Fictitious polyps as seen in double contrast studies of the colon. *Radiology*, *53*:386–393, Sept. 1949.

film the size of a dental film to be worn or carried in the pocket of a person who may be exposed to ionizing radiation. The amount of radiation exposure is determined by measuring degree of blackening of the film.

Film Ring—A finger ring designed to hold a film badge.

Filter, *n.*—Used in x-ray physics to indicate a sheet of metal through which the rays pass before striking the object to be examined or treated. Copper and aluminum are the most common types of filter in use.

Filter, *v.*—Used to indicate that a beam of x rays is being altered by the interposition of a sheet of appropriate metal.

Filter, Primary—A sheet of metal placed in the beam of x rays to absorb the less penetrating elements.

Filter, Secondary—A sheet of metal, such as aluminum, placed in the filtered beam of radiation to absorb characteristic radiation produced by the primary filter.

Fimbriated Ends—These are the wavy ends of the Fallopian tubes in close approximation to the ovaries.

Finger, *n.*—Any one of the five digits of the hand.

"Fish-Mouthing" of Vertebrae—This refers to the biconcave deformity in which there is an ellipsoid indentation of the vertebral bodies by enlarged nuclei pulposi.

"Fish-Tail" Vertebrae—Having the shape of a fish's tail and seen in pituitary basophilism. (Cushing's disease.)

Fissile, (Fissionable), *n.*—Cleavable or capable of being split. Used to describe types of atoms such as uranium, thorium etc., which may undergo fission.

Fission, *n.*—Splitting of an atom into two large fragments, in contrast with a nuclear disintegration where the fragment emitted is an alpha particle or smaller. Fission is induced by absorption of a fast or slow neutron by the susceptible nucleus, and follows immediately or after a short time on the order of 10^{-12} seconds, with emission of several fast neutrons.

Fission Products—Elements produced by fission, which are usually radioactive.

Fission Yield—The proportionate amount of fissions leading to a single nuclide by direct formation and decay of precursors.

Fissural, *adj.*—Of or pertaining to a fissure.

Fissure—Any cleft or groove, normal or otherwise.

Fissure, Calcarine—A deep fissure in the mesial surface of the occipital lobe of the brain.

Fistula, *n.*—An abnormal passage from an abscess cavity to the outside; or lying between two organs such as the gallbladder and duodenum.

Fistulous, *adj.*—Of or pertaining to a fistula.

Fixed Angle Method—A method for localization of foreign bodies.

Fixer, *n.*—The "hypo" or clearing and fixing solution used in processing an x-ray or photographic film.

Fixing Bath—The solution used for clearing an x-ray film following the development process and also containing preservative and hardening agents.

Flaccid, *adj.*—Without tone; flabby.

Flap Fracture—A fracture of the skull in which the fracture line produces a flap-like fracture, with overriding of the edges.

Flat, *adj.*—Lack of contrast between the high lights and shadows of a radiograph.

Flat Pelvis—Referring to a pelvis with a short anterior-posterior diameter or platypelloid.

Flat Plate—An obsolete term which should not be used. Glass Plates, as such, have been out of use since the development of x-ray films for radiography by George Eastman in 1917. Preferable terms are plain film, preliminary film, scout film, survey radiograph, and KUB.

Flat Roentgenogram—Ordinary; not stereoscopic. Flat plate. (Obsolete.)

Flattening, *n.*—Spoken of as flattening of an intervertebral disc or the body of a vertebrae. This may also describe change in contour of a surface.

Flatus, *n.*—Gas in the intestines.

Fleck Formation—A small collection of barium seen in an ulcer crater with only a small amount of barium in the stomach and duodenum. This may also mean barium adhering to an ulcer crater after the main body of the opaque meal has passed.

Fleischner's Lines—These are platelike atelectases seen at the lung bases which run horizontally across the lung fields usually extending to a pleural surface.[1] (cf. Kerley's lines.)

Fleischner's Spearhead Sign—A sign described by Felix Fleischner showing a pointed proliferation of the terminal ileum producing a "Spearhead" filling defect which extends into the ileocecal junction, and seen in tuberculosis of the colon.

Flex, *v.*—To bend the arm at the elbow by bringing the forearm toward the upper arm; to bend any joint in similar fashion so as to approximate the parts it connects.

Flexion, *n.*—The act of bending or condition of being bent, in contrast to extending.

Flexure, *n.*—A bend or turn as in the splenic flexure of the colon.

Flocculent, *adj.*—Resembling the white portion of "floating island" or a fluid or culture containing whitish shreds of mucus; fluffy.

[1] Fleischner, Felix G., Hampton, A. O., and Castleman, B.: Linear shadows in the lung. *Am. J. Roentgenol.*, *46*:610–618, 1941.

Fluid Level—A horizontal line formed by fluid in a cavity in which air or gas is also present.

Fluorescence, *n.*—The property of a substance of becoming luminous after exposure to some outside influences, such as light or x rays.

Fluorescent Screen—A sheet of heavy cardboard coated with such a substance as barium platinocyanide, calcium tungstate or zinc sulphide that will emit visible light (in a dark room) when ionizing radiations are directed on it.

Fluorex, *n.*—Trade name of an x-ray diagnostic table and apparatus.

Fluorine Intoxicant (Poisoning)—Marked by deposition of fluoride deposits in bone which is visible roentgenographically.

Fluorography (Photofluorography)—Utilizing an arrangement of photographic camera and a fluoroscopic screen to record a miniature roentgen image.

Fluoroscope, *n.*—A piece of x-ray apparatus consisting of an x-ray tube properly housed and mounted so that x rays emanating from the tube will strike upon a sheet of cardboard covered with calcium tungstate, or other suitable fluorescent material. The object to be examined is interposed between the tube and the screen, casting its shadow of varying densities on the screen.

Fluoroscope, *v.*—To make a fluoroscopic examination with the fluoroscopic screen.

Fluoroscopic, *adj.*—Of or pertaining to fluoroscopy, as the fluoroscopic image.

Fluoroscopic Examination—A roentgenoscopic or visual examination at the fluoroscopic screen as opposed to the radiographic examination.

Fluoroscopic Image—The patterns of varying densities shown on the fluoroscopic screen as x rays are passed through a body having areas of different density or opacified by contrast media.

Fluoroscopic Intensifier—An image amplification system depending upon an electronic multiplier tube which serves to concentrate electrons on a smaller area screen.

Fluoroscopic Screen—A sheet of cardboard or some similar material coated with a fluorescent substance such as calcium tungstate. The screen is covered with lead containing glass to prevent x rays from striking the observer.

Fluoroscopic Timer—A safety device preset to shut off the current after time allowed has elapsed.

Fluoroscopy, *n.*—The process of x-ray examination which utilizes direct examination with a fluoroscopic screen in a darkened room in order to visualize opaque bodily structures or opacified viscera.

Focal Atelectasis—Plate-like or linear airless lung described by a Boston radiologist, Dr. Felix Fleischner, and termed Fleischner's lines.[1]

Focal Cerebral Atrophy—Spotty, not generalized.

Focal Spot or Point—The small spot on the target of an x-ray tube which receives the impact of the electron stream from the cathode, and from which x rays are emitted in all directions. The focal spot is usually composed of a tungsten insert in some softer metal such as copper.

Focus, *pl. -i, n.*—The point of convergence of light rays or waves of sound. A small collection or nidus; a single focus or multiple foci. (Not fossae.)

Focus-Film Distance (Target Film Distance)—The distance from the focal spot or target of an x-ray tube to the tube.

Fog, *n.*—Hazy appearance of a radiograph due to exposure to light or x rays, or subjection to unusual chemical action.

Fogging, *v.*—Exposure of film to light, x rays, heat or chemical action to cause the effect termed fog.

Follicle, *n.*—A small cavity, such as the Graafian follicle of the ovary.

Follicular Cyst—One containing secretion from a follicle as in the Graafian follicles.

Fontanel, *n.*—Unossified area covered by membrane at the regions of the sutures of the skull and found in the newborn infant.

Foot, *n.*—The lowermost part of the leg composed of the tarsal, metatarsal and phalangeal bones.

Foramen, pl. **Foramina,** *n.*—A passage or opening; an orifice, a communication between two cavities of an organ, or a hole in a bone for passage of vessels or nerves.

Foramen of Bochdalek—A canal or minute opening in Shrapnell's membrane; a gap in the diaphragm posteriorly on each side of the vertebral column, site of an uncommon diaphragmatic hernia.

Foramen Lacerum—The irregular foramen at the tip of the petrous pyramid and forming the end of the carotid canal for passage of the internal carotid artery.

Foramen of Magendie—The foramen in the inferior portion of the fourth ventricle connecting with the subarachnoid space of the spinal cord.

Foramen Magnum—Large opening in the base of the occipital bone through which the spinal cord passes.

Foramen of Monro—The interventricular foramen connecting the anterior, inferior and medial portions of the lateral ventricles of the brain.

Foramen of Morgagni—A potential opening in the diaphragm near its attachment to the dis-

[1] Fleischner, F. G., Hampton, A. O., and Castleman, B.: Linear shadows in the lungs. *Am. J. Roentgenol.*, *46*:610–618, 1941.

tal posterior aspect of the sternum and site of an uncommon diaphragmatic hernia, the retrosternal type.

Foramen Ovale—(1) Opening at lower portion of septum between the heart's auricles in fetus, (2) Oval opening in the greater wing of the sphenoid bone for the mandibular nerve and the small meningeal artery.

Foramen, Supratrochlear—An inconstant opening through the thin plate of bone between the olecranon fossa and the coronoid fossa in the lower extremity of the humerus.

Foramen of Winslow—The space between the two sacs of the greater and lesser peritoneum and passing behind the portal fissure of the liver.

Foramina of Luschka—Paired foramina in the lateral portion of the fourth ventricle for passage of cerebrospinal fluid into the subarachnoid pathways.

Foramina Parietalia Permagna—Enlarged parietal foramina occurring on either side of the midline in the midportion of the parietal bone. (Also enlarged parietal foramina.)

Fore, *adj.*—Part coming first.

Forearm, *n.*—The portion of the upper extremities between the elbow and the wrist.

Foreign Body (F.B.)—Any extraneous or foreign substance, either opaque or nonopaque, which can be demonstrated by x ray either directly or by air contrast.

Fornix, *n.*—(1) A band of white substance consisting mainly of fibers connecting the hemispheres of the cerebrum, (2) Any vault-like space.

Fossa, *n.*—A hollow depression in a bone; the anterior, middle, and posterior cranial fossae.

Foster Kennedy's Syndrome—In frontal lobe tumors, there is atrophy of the optic nerve on the side of the lesion and edema on the opposite side. Earlier there may be swelling more marked on the side of the lesion without atrophy.

Fractional Distillation—The process of separating, in a "tower" or "fractionating column," some components of a mixture from others with different boiling points by carefully boiling off only part of the mixture at a time.

Fractionation, *n.*—Breaking up a total dose of x radiation into small fractions of low intensity given at daily or alternate daily intervals. (Coutard's method).[1]

Fracture, *n.*—A break in the continuity of a bone.

Fragilitas Ossium—Abnormal fragility of the bones, fractures being readily produced by slight trauma; also called Lobstein's Disease.

Fragment, *n.*—Spoken of one of two or more pieces of a fractured bone.

[1] Coutard, H.: Roentgenotherapy of epitheliomas of the tonsillar region, hypopharynx and larynx from 1920 to 1926. *Am. J. Roentgenol.*, *28*:313, 1932.

Frankel's Line—A white line seen in the distal metaphysis of a long bone in scurvy or hypovitaminosis C.

Fray's Method[2]—Use of an 8° and 12° angle for determining displacement of the pineal body on lateral roentgenograms of the skull.

Fred Thompson Hip Prosthesis—A special orthopedic appliance for the head and neck of the femur. (See chart on page 108.)

Free Air Ionization Chamber—One in which a collimated beam of radiation passes between the electrodes without coming in contact with them or other internal parts of the equipment. Such a device as this is the basic standard instrument used for x-ray dosimetry in the range from 5 to 400 KV.

Frei Test—A test for lymphogranuloma inguinale in which pus drawn from a softened bubo mixed with saline and sterilized by heat is used for intracutaneous injection.

Freiberg's Infraction or Disease—Köhler's disease of the second and third metatarsophalangeal joints. The heads of the two metatarsals become thickened and the joint spaces irregular, due to osteochondritis. (See also osteochondritis deformans metatarso-juvenilis.)

Frenum (Frenulum), *n.*—A fold or membrane situated under the anterior portion of the tongue and fastening it to the floor of the mouth; also between the gum and lip and between the under side of the penis and the prepuce.

Frequency, *n.*—Periodic recurrence of wave motion, as in the wave motion of an electric current. The number of cycles completed in unit time.

Friction Marks—Artefacts on films due to discharge of static electric charges which accumulate as a result of rubbing together of the films; also, abrasion marks from rubbing.

Friedlander's Bacillus—A virulent microorganism producing a frequently fatal form of pneumonia.

Frilling, *n.*—Separation of the emulsion coat from the celluloid at the margins of films.

Fröhlich Syndrome (adiposogenital dystrophy)—This syndrome is characterized by preadolescent obesity, retarded growth, and sexual infantilism.

Frontal, *adj.*—Pertaining to the front or anterior portion of the body.

Frontal Bone—The flat bone which forms the forehead.

[2] Fray, W. W.: Methods for determining pineal position with analysis of their errors. *Am. J. Roentgenol. & Rad. Ther.*, *42*:490, 1939.
idem.: Roentgenological study of pineal orientation, III. A comparison of methods used in pineal orientation. *Am. J. Roentgenol. & Rad. Ther.*, *39*:899, 1938.

Frontalis, *adj.*—Of or pertaining to the front or anterior aspect, or as applied to the frontal bone in hyperostosis frontalis interna.

Frontal Lobe—The anterior portion of each cerebral hemisphere.

Frontal Plane—Coronal plane; a plane which divides the body into ventral and dorsal parts.

Frontal Sinuses—The accessory nasal sinuses located in the frontal bone.

Frontal View of the Skull—A view taken with the frontal bone in contact with the film.

Fronto-Malar Suture—The suture between the frontal and malar bones seen on the lateral sides of the orbits.

Fronto-Parietal—Location of a tumor involving both of these lobes of the brain. Designates an area of the brain corresponding to the frontal and parietal bones of the skull.

Fronto-Zygomatic Suture—Same as the fronto-molar suture. (Zygomatic or malar bone.)

Frostberg's Inverted 3 Sign[1]—An irregular appearance seen on the medial aspect of the second portion of the duodenum at the ampulla of Vater, may be indicative of a tumor in the head of the pancreas.

Fuel Rod—Used in nuclear reactors as long, slender fuel inserts.

[1] Frostberg, N.: Characteristic duodenal deformity in cases of different kinds of peri-vaterial enlargement of the pancreas. *Acta. Rad.*, *19*:164–173, 1938.

Full Wave Rectification—Rectification of the entire wave of an alternating current of an x-ray machine by means of a mechanical rectifier or valve tubes.

Function, *n.*—The natural and proper action required of a part or structure.

Fundus, *n.*—(1) The larger part, base, or body of a hollow organ, (2) The cardiac end of the stomach.

Fungus Infection—A disease, especially of the lungs, which may be suggested by roentgenologic examination.

Funnel Chest—Pectus excavatum.

Funnel Deformity—Funnel chest (pectus excavatum) indicated by marked depression of the sternum.

Fuse, *n.*—A piece of metal having a low melting point inserted in electrical circuits to interrupt the flow of current if the circuit becomes overheated.

Fuse, *v.*—To join together as by welding.

Fused, *adj.*—Joined or grown together, as kidneys across the midline forming a horseshoe kidney or, between ribs, forming a synostosis.

Fused Kidneys—An anomalous condition in which the kidneys are joined together.

Fusiform, *adj.*—Tapering at both ends, shaped like a spindle.

Fusion, *n.*—Union of two parts either by disease process or operative intervention.

Fusion, *n.*—(Nuclear Fusion.) Combination of two or more atomic nuclei.

G

Galen Aponeurotica—The tough sheath of fascia covering the skull to which the temporal muscles are attached.

Galen, Vein of—The great cerebral vein which may be opacified in cerebral angiography.

Gall, *n.*—Bile.

Gallbladder, (GB) *n.*—The reservoir for bile on the under surface of the liver.

Gallbladder Examination (GB Exam)—An x-ray examination of the gallbladder after taking an opaque medium to opacify it. A cholecystogram or Graham dye test.

Gallbladder Series (GB Series)—One of a series of roentgenograms demonstrating the gallbladder after it has been opacified by ingested contrast medium.

Gallstone Ileus—Obstruction and distention of the bowel caused by impaction of a large gallstone within it.

Gallstones, *n.*—Biliary calculi; stones found in the gallbladder, the cystic and biliary ducts.

Galvanometer, *n.*—A very delicate electrical instrument for the measurement of extremely small electrical currents.

Gamete, *n.*—A male or female germ cell.

Gamma, *n.*—The third letter of the Greek alphabet γ equivalent to the English "G" used as a symbol for a unit of weight that is one millionth of a gram or one thousandth of a milligram and should be read "microgram."

Gamma Rays—Electromagnetic radiations spontaneously emitted from radioactive deposits or materials. They have more penetrating power than alpha or beta particles.

Ganglion, *pl.*, **Ganglia,** *n.*—A tumor of a tendon sheath; also spoken of as an aggregation of nerve cells along the course of a sensory nerve root such as the ganglion of a spinal nerve.

Ganglioneuroma, *n.*—A tumor of nerve tissue arising at a ganglion.

Gangrene, *n.*—Necrosis of tissue plus putrefaction.

Gargoylism—A form of osteochondrodystrophy manifested, in addition to the joint changes, by congenital corneal opacities, hepatosplenomegaly and mental deficiency. The face is also characteristic, having thick lips, depressed bridge of the nose, low set ears and widely spaced teeth. (Also Hurler's Syndrome or dysostosis multiplex.)

Garré's Non-Suppurating Osteomyelitis—Form of a very low grade infection of bone which does not suppurate. (Also sclerosing osteomyelitis of Garré.)

Gartner's Duct—A persistent portion of the mesonephric duct in females. It is seen as a linear shadow in contrast studies extending from the cervix to a uterine cornua.

Gas Amplification—Used in a device for detecting ionizing radiation.

Gas Containing[1]—Gas seen within gallstones or within the gallbladder.

Gaseous Distention—Distention of the abdomen by excessive gas in the intestines.

Gas-Flow Counter—A counter for measuring radiation in which a suitable atmosphere is maintained within the tube by allowing an appropriate gas to flow slowly through the sensitive volume.

Gas in Nucleus Pulposus—Presence of gas within the nucleus pulposus of the intervertebral cartilage in degenerative conditions.

Gas in Soft Tissues—Referring to subcutaneous emphysema as seen in trauma and gas bacillus infection.

Gastrectomy, *n.*—Excision of the stomach or a part of it in partial gastrectomy, or subtotal gastrectomy.

Gastric, *adj.*—Pertaining to the stomach.

Gastric Crises—Severe lancinating pains in the stomach occurring in tabes dorsalis.

Gastric Mucosa—Lining of the stomach heaped into large folds or rugae.

Gastric Ulcer—A peptic ulcer involving only the stomach.

Gastriloid, *n.*—A proprietary preparation of barium for x-ray examination.

Gastritis, *n.*—Inflammation of the stomach.

Gastrocele, *n.*—Herniation of a portion of the stomach, as in diaphragmatic hernia.

Gastrocnemius Muscle—The heavy muscle forming the calf of the leg.

Gastrocolic, *n.*—Connection between the stomach and the colon as in gastrocolic fistula.

Gastrocoloptosis, *n.*—Downward prolapse of the stomach and colon.

Gastroduodenal, *adj.*—Of or referring to the stomach and duodenum.

Gastroenterogenous Cyst—One arising between the stomach and the intestine.

Gastroenterostomy—Surgical anastomosis between the stomach and the small bowel.

Gastrointestinal, *adj.*—Of or referring to the stomach and intestinal tract.

Gastrointestinal Examination—An x-ray examination of the GI Tract by upper GI Series and barium enema.

Gastrointestinal Examination, Lower—A barium enema x-ray examination.

[1] Hinkel, C. L.: Gas-containing biliary calculi. *Am. J. Roentgenol. & Rad. Ther., 64*:43. Oct. 1950.

Gastrointestinal Examination, Upper—An upper GI Series or x-ray examination of esophagus, stomach, duodenum and remainder of small bowel.

Gastrojejunostomy, *n.*—The formation of an artificial passage from the stomach to the jejunum, usually posterior.

Gastropathy, *n.*—Any disease of the stomach.

Gastroptosis, *n.*—Abnormal falling of the stomach; Glenard's Disease. (Obsolete.)

Gastroscopy, *n.*—The art of examining the inside of the stomach with a gastroscope.

Gastrostomy, *n.*—Surgical production of an artificial opening into the stomach.

Gaucher's Disease—A disease in which lipoprotein is deposited in the reticulo-endothelial system leading to roentgenologically demonstrable lesions in the skull and long bones. It is closely related to xanthomatosis, and is one of the reticuloendothelioses.

GB—Abbr. for the gallbladder.

GB Exam.—An x-ray examination of the gallbladder; a cholecystogram.

GB Series—An x-ray examination of the gallbladder using multiple exposures.

Geiger Counter—An instrument devised by Geiger & Müller to count ionizing particles in the air; used in radiology principally for the detection of small quantities of radium which have been lost.

Geiger-Müller Counter (Gm Counter)—Same as Geiger counter.

Geiger Region—In an ionization radiation detecting device, the operating voltage interval in which the charge selected for ionizing events is entirely independent of the number of primary ions produced in the initial ionizing event.

Geiger Threshold—The lowest voltage at which a G-M tube will operate in the Geiger region.

Geissler, Heinrich—The German inventor of the earliest gas tube (1860) for passing an electric current and the precursor of the Hittorf, Crookes, Lenard and Roentgen tubes.

Gelatin, *n.*—The basic jelly-like substance forming the base for photographic or x-ray film.

Gelobarin, *n.*—A proprietary preparation of gelatin and barium for x-ray examination of the gastrointestinal tract.

Gene, *n.*—The genetic factor in one or both of the gametes determining a particular hereditary character in the resulting zygote.

General Population MPC—The maximum permissible concentration for the total population of the world, with its high percentage of children, pregnant women, and other groups especially sensitive to radiation injury. The general population MPC for strontium 90 in bone is currently 66 strontium units per gram of calcium.

Generator, *n.*—A mechanical device rotated by water or steam power which produces an electric current by moving a magnetic field across turns of a coil of wire. In this manner either DC or AC current may be produced.

Genetic Damage—Possible damage of irradiation of the ovary during embryonic stage.[1]

Genetic Effect of Radiation—Presumably irreversible changes, principally mutations, which may be produced in subsequent generations by the absorption of ionizing radiation.

Genetics, *n.*—The study or science of natural development and hereditary influences.

Genial Tubercle—A small bony prominence on the posterior surface of the mandible on either side of the symphysis.

-genic—*Suffix* meaning origin.

Genital, adj.—Of or pertaining to the organs of reproduction.

Genotype, *n.*—A type determined by the genetic characters common to a group.

Genu Valgum—Knock knees.

Genu Varum—Bowlegs.

Geographic Skull (Osteoporosis Circumscripta)—An early manifestation of Paget's Disease where there is a confluent maplike resorption of bone.

Geometry Factor—That fraction of the total solid angle surrounding a source of radiation that is subtended by the face of the sensitive volume of a detector.

Germ Cells—Reproductive cells of an organism, ova in the female and spermatozoa in the male.

Germ Plasm—The gametes and the cells from which they are derived.

Gestation, *n.*—Pregnancy.

Ghon Focus (Tubercle)—All the linear or stippled areas of calcification in the lung parenchyma representing residual or a counterposed tuberculous infiltration during the afterphase of primary tuberculous disease of the lungs.

Ghon's Disease[2]—Ghon's primary lesion—A bean-shaped calcified shadow in the x-ray examination of the lung seen in certain cases of pulmonary tuberculosis in children. (See also Ranke complex.)

Giant Cells—Multinucleated, abnormally large cells found in the tissues in various pathological conditions.

Giant Cell Tumor (Osteoclastoma)—A specific type of tumor of bone, causing an area of destruction but non-metastatic. This tumor

[1] Russell, W. L., Russell, L. B., Steele, M. H., Phipps, E. L.: Extreme sensitivity of an immature stage of mouse ovary to sterilization by irradiation. *Abst. from Papers Presented at 96th Annual Meeting National Academy of Sciences*, Wash. D. C., April 27–29, 1959.

[2] Ghon, Anton: *Der Primare Lungenherd Bei der Tuberkulose der Kinder*. Berlin, Urban and Schwarzenberg, 1912.

typically has a "basket weave" or "soap bubble" appearance and the lesion often involves the epiphysis as well as the diaphysis, crossing the epiphyseal line.

Gibbus Deformity—This is a posterior angulation of the vertebral column similar to a kyphos but without definite disturbance in the line of weight bearing.

GI Exam.—Roentgenological examination of the upper gastrointestinal tract. Upper and lower GI Series.

Giga—*prefix* meaning billion, i.e., one thousand million.

Gigavolt, *n.*—A billion or a thousand million volts.

Girdle, *n.*—Referring to the shoulder girdle or to girdle obesity such as seen in certain pituitary disorders.

GI Series, Lower—A barium enema x-ray examination of the large bowel, i.e., rectum, sigmoid colon, descending colon, transverse colon, ascending colon and the cecum including ileocecal valve.

GI Series, Upper—Roentgenological examination of the gastrointestinal tract, namely the esophagus, stomach, duodenum and remainder of the small bowel.

Glabella, *n.*—A small prominence on the anterior and inferior portion of the mid frontal bone just above the articulation with the nasal bones.

Gladiolus, *n.*—The second bony division of the sternum.

Gland, *n.*—An organ of either internal or external secretion, the former ductless and the latter having a duct for carrying the secretion to another part.

Glands of Brunner, Hypertrophy of—Enlargement of these glands may produce filling defects in the base of the duodenal bulb.

Glandulography, *n.*—Visualization of glandular structures as by injection of the salivary ducts. (See also sialography and mammography).

Glans, *n.*—The conical vascular structure at the end of the penis or clitoris.

Glasser, Dr. Otto—Professor of Biophysics at the Cleveland Clinic Foundation. Biographer of Roentgen. With Fricke in 1925 devised thimble-sized ionization chambers with walls of a material having the same effective atomic number as air.

Glaucoma, *n.*—A disease of the eye manifested by increased intraocular pressure.

Glenoid, *n.*—(Cavity or Process). The cavity of the scapula receiving the head of the humerus and forming the shoulder joint.

Glenoid Fossa—The depression in the temporal bone for articulation with the condyle of the mandible. (Also mandibular fossa.)

G-Line—The Granger line or floor of the optic groove seen in the Granger[1] view for the sphenoid sinuses, which may be thickened or obscured in sphenoid sinus disease.

Glioblastoma, *n.*—A neoplasm of nerve tissue; a malignant brain tumor.

Glioma, *n.*—A tumor of nerve tissue origin.

Globe, Eye—The entire organ of sight contained within the bony orbit.

Globular, *adj.*—Spherical or globe-shaped.

Globus Hystericus—A form of hysteria manifested by feeling of a lump in the throat.

Glomerulonephritis, *n.*—A parenchymatous type of nephritis with lesions limited to the glomeruli.

Glomus, *n.*—Small round swelling made up of tiny blood vessels and found in a stroma containing many nerve fibers, in the choroid plexuses of the lateral ventricles and in the distal fleshy pads of the fingers.

Glomus Tumor—A tumor composed of minute arteries, veins and nerves in the terminal phalanx of a finger.

Glottis, *n.*—Upper opening of the air passage.

Gluteal, *adj.*—Of or referring to the gluteus or buttocks.

Gluteus Muscle—The muscle forming the prominence of the buttocks.

Glycogen, *n.*—The form of carbohydrate in which sugar is stored in the liver. An excessive amount of glycogen is stored in Von Gierke's Disease.

Goggles, *n.*—Eye covers, usually of red polaroid plastic, for dark adapting the eyes before fluoroscoping.

Goiter, *n.*—Enlargement of the thyroid gland which may be endemic where there is a deficiency of iodine in the soil.

Goiter, Substernal—An elongated or displaced gland situated beneath the sternum.

Golden's Pattern—"Disturbed motility pattern" representing segmentation and a so-called "sausage" sign or "clumping." Segmentation, scattering and disordered motility are found in association with any pathologic condition which will produce swelling or inflammatory infiltration of the small bowel.[2]

Gonads, *n.*—Sex glands.

Gonion, *n.*—The center of the symphysis of the mandible used as a roentgenographic landmark.

[1] Granger, Amadee: A new technic for the positive identification of the sphenoid sinus and the ethmoid cells. *Jour. of Radiology*, April 1923.
idem.: Positive identification of the sphenoid & ethmoid sinuses. *J.A.M.A.*, Oct. 20, 1923, p. 136.
idem.: The value of the Granger line in diagnosis of disease of the sphenoid sinus with illustrative cases. *Radiology*, Sept. 1924.

[2] Golden, R.: *Roentgenographic Examination of Digestive Tract*, Baltimore, Williams and Wilkins 1949.

Gonococcus, *n.*—The micro-organism producing gonorrhea.

Gout, *n.*—A metabolic disease especially affecting the large joint of the great toe.

Gradenigo's Syndrome—Apical petrositis in combination with paralysis of the homolateral sixth cranial nerve.

Graft, *n.*—Usually referring to a bone graft, an operative procedure in treating fractures.

Graham, Dr. Evarts[1]—A St. Louis surgeon who with Cole devised the dye test described below for opacification of the gallbladder.

Graham (Graham-Cole) Test[2]—(for gallbladder) Tetrabromphenolphthalein test in its earliest form for opacification of the gallbladder. Now more commonly Telepaque or Tetriodax are used and, most recently Orabilex. The first opaque substance was used by intravenous injection; the later compounds are given by mouth.

Grain, *n.*—(in photography). The degree of coarseness of the surface of a screen or film due to the small crystals which go to make up the coating.

Gram Atomic Weight—The mass in grams of a substance numerically equal to the atomic weight of the element.

Gram Molecular Weight (Gram-Mole)—A gram molecule or the quantity of a compound or element which has a weight in grams equal numerically to its molecular weight.

Gram Specific Activity—Ratio of activity to the total mass of a heterogeneous material, expressed in curies per gram.

Granger[3] **Projection**—A PA radiograph of the skull made with the head at an angle of 17° with the tabletop, for showing the frontal and sphenoid sinuses. (See also G-line).

Granulation, *n.*—The fleshy masses composed of fibroblasts and new blood vessels.

Granulocyte, *n.*—One of the white blood cells whose cytoplasm is granular, unlike the lymphocyte which has a clear cytoplasm.

Granuloma, *pl.-ta, n.*—A granulating mass of tissue usually in response to some type of infection.

Granulomatous Lesion—Usually a circumscribed lesion surrounding a central point of irritation or infection.

Granulopenia, *n.*—Decrease of granulocytes in the blood.

[1] Graham, Evarts A.: Awarded gold medal of Radiological Society of North America for gallbladder dye test. *Radiology, 6*:169, 1926.

[2] Graham, Evarts A., Cole, Warren, H., and Copher, Glover H.: Roentgenological visualization of the gallbladder by intravenous injections of tetrabromphenolphthalein. *Radiology, 4*:83, 1925.

[3] Granger, Amadee: A new technique for the positive identification of the sphenoid sinus and the ethmoid cells. *Jour. of Radiology*, April 1923.

Grating, *n.*—A diffraction grating used in x-ray crystallography.

Gravitation, *n.*—A force or pressure attracting material bodies together as in the universe. This force is proportional to the product of the masses of the two bodies and inversely proportional to the square of the distance between them.

Grawitz Tumor—A carcinoma arising from renal tubular epithelium, previously believed to be a hypernephroma arising from aberrant adrenal tissue.

Greater Trochanter—A large prominence of bone on the lateral side of the upper end of the femur.

Great Vessels—Referring to the aorta and its principal tributaries, as well as the vena cava.

Greenstick Fracture—An incomplete fracture with one side broken and other side of the bone intact.

Grenz Rays (Also Bucky's Rays)[4]—These are border-line x rays so named by Dr. Gustav Bucky in 1929. They are of 5 to 15 KV range and measure 2 angstrom units.

Grid, *n.*—A meshwork of wire interposed between the anode and cathode of a vacuum radio tube; used in radiology for the construction of certain control and x-ray measuring apparatus; also Bucky grid,[5] composed of alternate strips of lead and a non-opaque material used to absorb secondary radiation.

Grid Cassette—One with a grid fitted into the cover of the cassette so that it may be used at the bedside or for lateral recumbent views on the table. Also known as the Camp grid cassette, and was devised by Dr. John D. Camp, of Los Angeles.

Grid Marks (lines)—The linear shadows cast on film by the Bucky diaphragm grid from failure to move at all, or not synchronized with the x-ray exposure.

Grid Radius—This refers to the degree of angulation at which lead strips are placed in a flat or curved Bucky grid, and this degree of angulation determines the minimum and maximum focus-film distance which may be employed with the particular grid.

Grid Ratio—The relation between the height of the lead strips and the width of the nonopaque material between them. Common grid ratios are—1:8, 1:12, 1:16.

Groove, *n.*—A small linear depression in a bone.

Ground, *n.*—A wire connecting electrical apparatus such as x-ray machines to the ground to prevent shock to persons coming in contact with such equipment.

[4] Bucky, G.: *Grenz-Ray Therapy*, New York. The MacMillan Co., 1929.

[5] Wilsey, R. B.: Efficiency of the Bucky diaphragm principle. *Am. J. Roentgenol., 9*:58, 1922.

Grumous (Grumose) *adj.*—Lumpy or appearing as if clotted.

Guaiac Test—A chemical test used to determine presence of blood in the stool. It may be positive or negative.

Guide Wire—A length of wire used in orthopedics.

Gullet, *n.*—The esophagus.

Gull's Disease—Adult myxedema.

Gumma, *n.*—Tertiary stage of syphilis, causing destruction of tissue.

Gunshot Wounds—Made by shotgun or rifle and so determined in roentgenography by the shadows of bird-shot or fragments of lead.

Gut, *n.*—The intestine.

Gynecography,[1] *n.*—This term was coined by Granjon to describe pneumoperitoneum of the pelvis, a technique for better delineation of the uterine fundus, the Fallopian tubes, the broad ligaments and ovaries. Up to 2,000 ml. of air is injected and films are exposed in the extreme Trendelenberg position with the patient prone.

Gynecoid Pelvis—Female type pelvis.

Gyrus, *pl.-i, n.*—Prominent rounded elevations or convolutions on the surface of the brain separated from each other by deep fissures or sulci.

[1] Granjon, A.: *Presse med.*, *61*:1764–1766, Dec. 25, 1953 (reviewed in *Yearbook of Radiology*, p. 259, 1954–55 series).

X-RAY SURGICAL APPLIANCE CHART

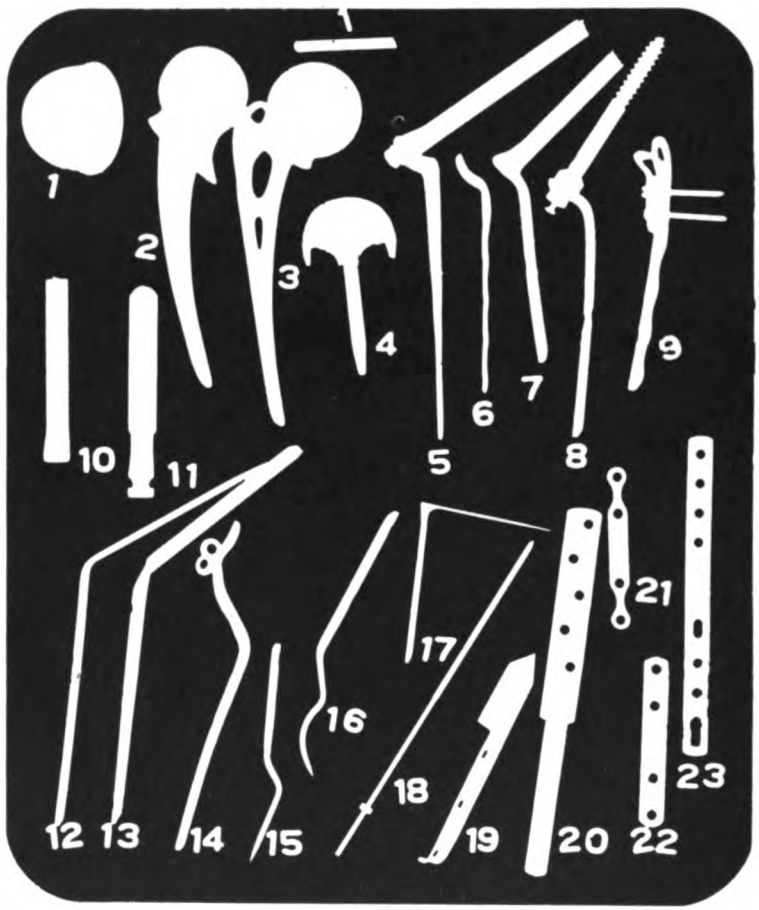


PLATE I

1. Smith-Peterson vitallium cup.
2. Fred Thompson hip prosthesis.
3. Austin Moore hip prosthesis.
4. Judet acrylic prosthesis (hip).
5. Smith-Peterson nail with McLaughlin bar.
6. McLaughlin bar (obsolete).
7. Jewett nail.
8. Lorenzo screw and plate.
9. Lorenzo plate (obsolete).
10. Smith-Peterson nail.
11. Böhler nail.
12. Moore blade plate.
13. Neufeld nail.
14. Moe plate.
15. Blount plate.
16. Curved Blount plate.
17. Wright knee plate.
18. Austin Moore nail (hip).
19. Bosworth spline (shoulder).
20. Bosworth spline (femur).
21. Sherman plate.
22. Venable plate.
23. Venable coaptation splint.

X-RAY SURGICAL APPLIANCE CHART

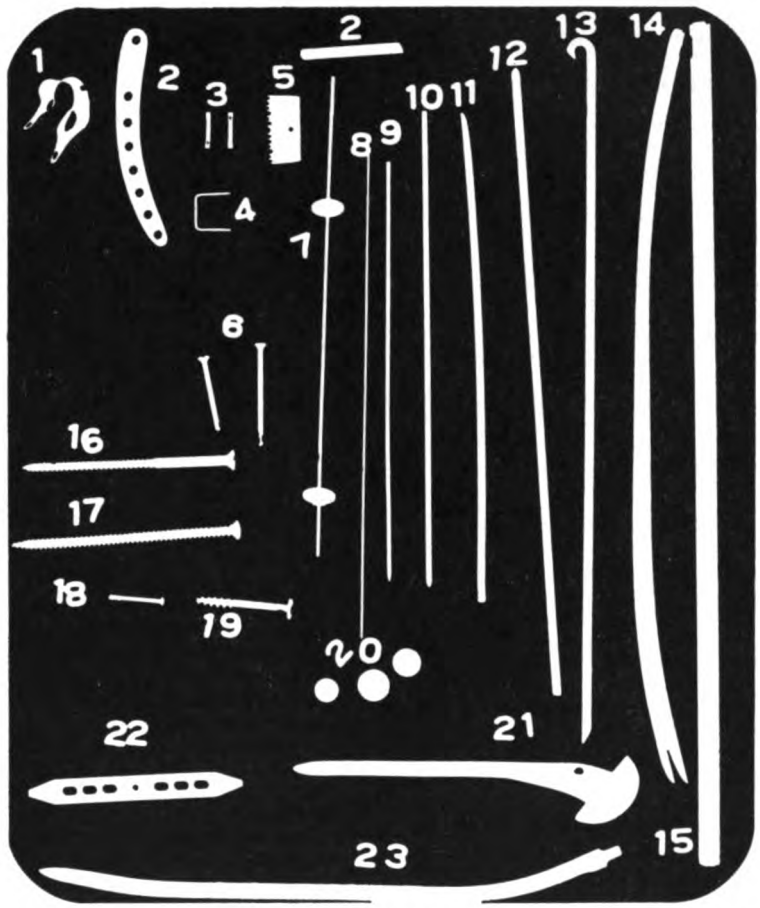


PLATE II

1. Elbow (trochlear) prosthesis (Wade)
2. Wilson spinal fusion plate.
3. Michel clips.
4. Staple (Downing).
5. Brown corrugated fasteners.
6. Collision screws.
7. Web tibial bolt.
8. Kirschner wire.
9. Guide wire.
10. Steinman pin.
11. Küntscher intramedullary nail (forearm).
12. Hanson-Street diamond shaped nail (intramedullary).
13. Rush intramedullary nail.
14. Küntscher nested intramedullary nail (tibia).
15. Küntscher clover-leaf nail (intramedullary) femur.
16. Arthrodesis wood screw.
17. Arthrodesis full threaded screw.
18. McLaughlin navicular screw.
19. Bosworth acromioclavicular screw.
20. Fett navicular balls.
21. Neer humeral head prosthesis.
22. Livingston intramedullary bar.
23. Lottes intramedullary nail (tibia).

H

Habenula, *n.*—(1) a frenum, (2) a peduncle of the pineal gland.

Habenular, *adj.*—Of or pertaining to the habenula.

Habenular Calcification[1]—A comma-like calcification seen just anterior to the pineal gland and located in the habenular commissure, thus pin-pointing this structure.

Habenular Commissure—Ventral part of the peduncle or stock of the pineal body curving around the posterior commissure of the cerebrum.

Half-Decay Period—The time necessary for a radioactive substance to disintegrate to one-half of its value. Also half-life.

Half-Life (HL)—The time required for one-half of a given number of radioactive atoms to disintegrate.

Half-Value Layer (HVL)—Used in radiation physics and therapy as an indication of the average penetrability of the beam of x rays coming from an x-ray tube; its value is determined by finding the thickness of a given filter, such as, aluminum, or copper, which will reduce the ionizing effect of the primary x-ray beam to one-half of its value. The HVL is a measure of the "hardness" or penetrating ability of radiation.

Half-Wave Rectification—Used to designate electrical rectification of one-half the sine wave in x-ray apparatus.

Halides, *n.*—Compounds of metals with the halogen elements: bromine, chlorine, iodine, and flourine.

Hallux, *n.*—The great toe.

Hallux Valgus—Pertaining to lateral displacement of the great toe.

Halogens, *n.*—A group of chemical compounds composed of bromine, chlorine, iodine, or fluorine.

Hamartoma, *n.*—A benign tumor composed of new growth of blood vessels, and commonly found in the lung. Roentgenographic identification of "pop corn" calcification is pathognomonic of this neoplasm.

Hamate, *n.*—One of the carpal bones having a hook-like process. Also known as the unciform.

Hamatum, *n.*—The unciform bone in the carpus (wrist).

Hamman-Rich Syndrome[2]—Diffuse progressive interstitial fibrosis of the lungs in which there is progressive clouding of the lung fields, moderate enlargement of the hilar lymph nodes and gradual development of cor pulmonale with the patient dying of right heart failure.

Hammered Brass or Silver Appearance—Convolutional markings on the inner table of the skull seen in young individuals and sometimes indicative of increased intracranial pressure if seen and associated with other suggestive changes.

Hampton Maneuver—Barium-gas contrast study of the duodenal bulb described by A. O. Hampton, a Boston radiologist.[3]

Hamulus, *n.*—Any process having a hook shape.

Hand, *n.*—The metacarpus and phalanges including five digits, and articulating with the carpus or wrist.

H and D Curve—Designed by the founders of the science of densitometry, Ferdinand Hurter and Vero Driffield, British scientists, who devised the curve to record results of evaluating essential qualitities of photographic emulsion.

Hand-Schüller-Christian Disease[4]—Xanthomatosis and also one of the reticuloendothelioses. Manifested roentgenologically by punched out defects in the skull and other bones, with associated exophthalmos and diabetes insipidus.

Hanson-Street Diamond Shaped Nail—An intramedullary nail used in orthopedic surgery. (See chart p. 109.)

Haplodont Teeth—Molar teeth having simple crowns without tubercles.

Haploid, *n.*—A single cell or individual having the basic chromosome number for its species, that is having half the number present in the somatic cells. Opposite of diploid.

"Hard" Radiation—A term applied to x radiation of short wavelength, having high energy and ability to penetrate deeply. Opposite of "soft" x rays.

"Hardness" of X Rays—The penetrability of x rays measured by half value layer; the "harder" the rays, the greater the penetration. "Hard" rays are of shorter wave length, and hence have more energy than those with longer wave lengths. See also HVL.

Haustral Fold—One of the indentations or folds in the large intestine forming a haustrum.

[1] Stauffer, H. M., Snow, L. B., and Adams, A. B.: Roentgenologic recognition of habenular calcification as distinct from calcification in the pineal gland; its application in cerebral localization (scientific exhibit), *Amer. J. Roentgenology, Rad. Therapy and Nuclear Med., 66:* 821, 1951.

[2] Hamman, L. and Rich, A. R.: Acute diffuse interstitial fibrosis of the lungs. *Bull. Johns Hopkins Hos., 74:*177, 1944.

[3] Hampton, A. O.: Safe method for roentgen demonstration of bleeding and duodenal ulcers. *Am. J. Roentgenol. & Rad. Ther., 38:*565–570, 1937.

[4] Christian, Henry A.; Defects in membranous bones, Exophthalmos and diabetes insipidus. *Contributions to Medical and Biological Research, 1:*390–401, 1919. (Oster Wm., Editor.)

Schüller, A.; Ueber eigenartige schadeldefekte im jugendalter. *Fortschr. a. d. Geb. d. Roentgenstrahlen, 23:*12–18, 1915.

Haustral Pattern—Characteristic appearance of the filled colon with the indentations produced by haustral sacculations and which may normally be almost absent from the descending and sigmoid portions.

Haustration, *n.*—Appearance of the formation of sacculations or pouches in the large bowel.

Haustrum, *pl.* *-a*, *n.*—A sac or fold produced in the large intestine by the longitudinal band (taenia coli) which is slightly shorter than the gut.

Hay Fever—An allergic reaction of the upper respiratory tract manifested by excessive sneezing, rhinitis and lacrimation.

Head, *n.*—The upper end or top; in anatomy, the cranium.

Head Band (in Radiography)—A broad muslin band with weights at either end used for immobilization of the head during radiography.

Head of Femur—The rounded upper end of the femur for articulation with the acetabulum to form the hip joint.

Head of Radius—The proximal end of the bone which articulates with the distal end of the humerus.

Health Physics—A division of occupational health dealing particularly with protection of personnel from the harmful effects of ionizing radiation.

Heart, *n.*—The muscular pump situated above the diaphragm in the mid portion of the thorax, containing two auricles and two ventricles for propelling the circulating blood.

Heat Dissipation—Capacity of the anode of an x-ray tube to conduct heat away from the target as by air, water, or oil cooling.

Heavy Water—Water in which the hydrogen of H_2O is partly or completely replaced by the heavier isotope of hydrogen called deuterium. The two possible kinds are DOH and D_2O. The molecular weight of water is 18; and heavy water, 19 or 20.

Heberden's Nodes—Enlargements of the distal interphalangeal joints of the hands in hypertrophic osteoarthropathy. (Osteoarthritis.)

Heel, *n.*—The rounded prominence of the back of the foot.

Hegar Dilators—Instruments used for dilating the cervical canal.

Heine Medin's Disease—A synonym for anterior poliomyelitis. (Infantile paralysis.)

Helium, *n.*—This is the second element in the periodic table having an atomic number of 2 and mass numbers of 3, 4 and 6. It is an inert gas, as it does not combine chemically with any other element.

Helium X-Ray Tubes—Tubes filled with helium gas.

Helix, *n.*—Anything spiral shaped, as the curving portion of the external ear.

Helix of Wire—A cylindrical coil made by many turns of wire.

Hemangioblastoma, *n.*—A brain tumor composed of angioblasts.

Hemangioendothelioma, *n.*—A tumor composed chiefly of blood vessels and endothelial cells.

Hemangioma, *n.*—A tumor composed of blood vessels. Also simply, angioma.

Hemarthrosis, *n.*—Hemorrhage into a joint as in hemophilia or following trauma.

Hematemesis, *n.*—Vomiting of blood, (cf. Hemoptysis.)

Hematogenous, *adj.*—Originating in the blood; blood borne.

Hematogenous Osteomyelitis—Blood borne infection of the bone.

Hematology, *n.*—The branch of medical science dealing with the study of the blood and its elements.

Hematoma, *n.*—Tumor filled with blood.

Hematopoiesis, *n.*—The process of generating blood cells by the bone marrow, spleen and lymph nodes.

Hematopoietic System—The body organs and structures such as bone marrow, spleen and lymph nodes producing blood cells.

Hematuria, *n.*—Blood in the urine.

Hemi—*prefix*, meaning half.

Hemianopsia, *n.*—Loss of vision in one-half of the visual field; bilateral, when it affects both eyes.

Hemiatrophy, *n.*—Atrophy of one-half an organ such as the brain. Also may apply to one-half of the body.

Hemihypertrophy, *n.*—Overgrowth of one-half or side of the body or of an organ.

Hemilaminectomy, *n.*—Removal of the vertebral lamina on one side only.

Hemithorax, *n.*—One side of the chest.

Hemivertebra, *pl.*-*ae*, *n.*—A vertebral defect in which one or more of the vertebrae is incomplete.

Hemochromatosis, *n.*—A disease manifested by excessive pigmentation of tissues especially in the liver and pancreas.

Hemoglobin, *n.*—Iron containing pigment in the blood.

Hemolytic Anemias—These are composed of thalassemia or Cooley's erythroblastic anemia, spherocytic anemia, or familial hemolytic icterus and sickle cell anemia. Radiographically they are characterized by increased porosity of the skull bones and coarsened trabeculation of the shafts of long bones which also become larger in diameter.

Hemomediastinum, *n.*—Blood in the mediastinum.

Hemopericardium, *n.*—Blood within the pericardial sac.

Hemophilia, *n.*—Congenital hereditary disease manifested by a marked tendency to bleed upon the slightest trauma and especially affecting the joints. A condition in which certain elements necessary for normal clotting are congenitally absent from the blood.

Hemophiliac Arthritis—A form of degenerative osteoarthropathy caused by hemorrhage into the joints. It is manifested by reactive bone changes, degeneration of the joint cartilage, cortical and subcortical cyst formations and eventually ankylosis of the joint.

Hemoptysis, *n.*—Expectoration of blood; hemorrhage from the lung. (cf. hematemesis.)

Hemorrhage, *n.*—Bleeding.

Hemorrhagic, *adj.*—Related or pertaining to bleeding.

Hemorrhagic Cyst—A sac filled with blood.

Hemorrhoids, *n.*—Piles. Varices of the external hemorrhoidal veins.

Hemosiderosis, *n.*—A condition in which hemosiderin is deposited in the tissues due to destruction of the blood corpuscles. A form of pneumoconiosis in which iron is deposited in the alveoli and interstices of the lung. This is sometimes seen in rheumatic heart disease.

Hemothorax, *n.*—Blood within the thoracic cavity.

Henoch's Purpura—Seen in childhood, this is an infectious disease marked by a febrile course, purpura and gastrointestinal disturbances.

Henry, *n.*—Unit of inductance of a circuit in which an electromotive force of one volt is induced by a current varying at the rate of one ampere per second.

Heparin, *n.*—The substance used to prevent formation of blood clots.

Hepatic, *adj.*—Of or pertaining to the liver.

Hepatic Flexure—The part of the ascending colon turning under the liver to extend transversely across the abdomen.

Hepatitis, *n.*—An infectious disease characterized by inflammation of the liver.

Hepatization—A stage of consolidation of the lung in pneumonia such as red and gray hepatization.

Hepatolienography, *n.*—Opacification of the liver and spleen by injection of a contrast medium for roentgenographic visualization.

Hepatolithiasis, *n.*—Formation of calculi in the intrahepatic radicles.

Hepatomegaly, *n.*—Enlargement of the liver.

Hepatoptosis, *n.*—This may be associated with interposition of the colon between the liver and the right hemidiaphragm which is considered a normal anatomical variant.

Hepatosplenography, *n.*—Same as hepatolienography for opacification of the liver and spleen by injection of a contrast medium for roentgenographic visualization.

Hereditary, *adj.*—Passed along from previous generations.

Heredity, *n.*—The transmission of physical and psychical characteristics of parents to their off-spring.

Hermetic, *n.*—Airtight.

Hermetically, *adv.*—Sealed airtight.

Hernia, *n.*—A protrusion of some part of the intestines or another internal organ; a rupture.

Herniated Disc—Displacement of the nucleus pulposus or a portion of the intervertebral disc into the spinal canal.

Herniated Nucleus Pulposus—Displacement of the nucleus pulposus of the intervertebral disc either superiorly, inferiorly or posteriorly.

Herniorrhaphy, *n.*—Surgical repair of a hernia.

Herpes, *n.*—A disease manifested by pain and vesiculation of the skin, occurring usually in crops as herpes simplex (fever blisters) and herpes zoster (shingles).

Herpes Zoster—Shingles occurring along the course of a nerve.

Hertwig's Sheath—A layer of epithelial cells continuous with the epithelium of the enamel organ, believed to shape the roots of the teeth.

Hertzian Wave—Electromagnetic waves of long wave length and frequency; radio waves.

Heterogeneous, *adj.*—Rays having varying wave lengths; such as the light rays which come from the sun, or the x rays which come from an x-ray tube.

Heterogeneous Reactor—A type of nuclear reactor in which fissionable material and moderator are so arranged as discrete bodies of such dimensions that there is a nonhomogeneous medium presented to the neutrons. (cf. Homogeneous Reactor.)

Heterotopic, *adj.*—Tissues out of place for the region in which they are found. Spoken of especially in relation to teratomata.

Heterozygous, *adj.*—A zygote derived from genetically dissimilar germ cells.

Hiatal, *adj.*—Of or pertaining to a hiatus as in hiatal hernia.

Hiatal Hernia—A herniation of the cardiac end of the stomach, through the diaphragmatic hiatus. A form of diaphragmatic hernia.

Hiatus, *n.*—An opening, as in the hiatus of the diaphragm, for passage of the esophagus into the cardiac portion of the stomach.

High Definition Intensifying Screens (Detail Screens)—Made with extremely small fluorescent crystals that provide best detail in radiographs.

High Frequency—(Current) Oscillation or the

reversing character of a high voltage discharge from a condenser.

Highmore's Sinus—The maxillary sinus or antrum.

High Speed Intensifying Screens—Made with large fluorescent crystals requiring shortest time of exposure to produce satisfactory radiographs.

High Velocity Electron—One traveling at a very high rate of speed.

High Voltage Transformer—A step-up transformer using a relatively low primary voltage and developing a greatly multiplied secondary voltage or kilovoltage such as used to supply the high voltage circuit of an x-ray machine.

Hilar, *adj.*—Of or pertaining to the hilum.

Hilar Dance—A shaking movement of the hila seen fluoroscopically in certain forms of heart disease.

Hilar Lymphadenopathy (Hilar adenopathy)—Enlargement of the lymph nodes present in each hilum.

Hilar Lymph Nodes—The lymph nodes present in each hilum.

Hilum, *pl.-a, n.*—(1)Depression or recess at the exit or entrance of duct into gland, or of nerves and vessels into an organ, (2) The root of the lungs at the level of the 4th and 5th thoracic vertebrae.

Hilus, *pl.-i, n.*—Same as hilum. Generally, in radiology taken to mean the roots of the lungs where they join the mediastinum.

Hindgut, *n.*—The last portion of the primitive intestinal tract in the embryo which forms the greater part of the ileum and all of the large intestine.

Hinge Joint—A ginglymus joint having a cylindrical convexity on one bone fitting into a corresponding concavity on another as, for example, in the elbow.

Hip, *n.*—The section on each side of the body below the waist formed by the iliac bones.

Hip Joint, *n.*—The joint between the acetabulum of the innominate bone and the head of the femur.

Hippel-Lindau's Disease[1]—Hemangioblastoma of the cerebellum or medulla oblongata, usually associated with renal hypernephroma and retinal angioma. It occurs as a familial affection. (See Lindau-Von Hippel Disease.)

Hippuran, *n.*—A drug used for intravenous urography.

Hirschsprung's Disease—A congenital disease of children caused by absence of ganglion cells in the large bowel wall and manifested by habitual constipation due to hypertrophy and dilatation of the lower portion of the large bowel. Also congenital megacolon and aganglionosis.

Hirsuties (Hirsutism)—Excessive growth of hair in the wrong places, especially in women.

Hirtz Projection[2]—An axial view of the skull to show the radiographic features of the base. This x-ray examination may be made with the central ray directed from above downward (supero-inferior) or from below upward (infero-superior).

Histology, *n.*—The study of microscopic anatomy.

Histoplasmoma, *n.*—Chronic calcifying lesion in lung caused by Histoplasma Capsulatum.

Histoplasmosis, *n.*—A disease due to Histoplasma Capsulatum.

Historadiography, *n.*—X-ray examination of tissues by radiographic enlargement techniques. (Microradiography).

Hittorf, Johann Wilhelm—A German physicist who devised a modification of Geissler's gas tube and discovered that an electron stream could be deflected by a magnet. (1869).

Hockey Stick Ureter—To describe a ureter having this appearance.

Hodgkin's Disease—One of a group of fatal diseases classified as lymphomata characterized by enlargement of lymph glands, especially those in the neck.

Hodgkin's Sarcoma—A malignant form of lymphoma.

Hold-Back Carrier—Some regent or inactive isotope of a radioactive element of similar properties that may be used to diminish the amount of radionuclide coprecipitated or absorbed in a chemical reaction.

Hold-Up—A term used to indicate the amount of valuable material tied up in processing.

Homogeneous, *adj.*—Having similar uniform composition; as homogeneous radiation, meaning radiation of similar wave length. (cf. heterogeneous and homogeneous.)

Homogeneous Radiation—Rays having the same wave length; such as, the characteristic secondary radiation produced when x rays strike metal.

Homogeneous Reactor—One in which fissionable material and a moderator are combined by mixing in such a way that an effectively homogeneous medium is presented to the neutron.

Homogenous, *n.*—Having the same origin. (cf. homogeneous.)

Homologous, *n.*—Having a similar structure or

[1] Von Hippel, Eugen: Ueber eine nahezu isolierte degeneration des ganglion retinae. *Albrecht Von Graefes Arch. Für Ophthal. 79:*545–551, 1911.

[2] Hirtz, E. J.: Quelques nouveaux details sur la radiographie de la base du crane. *Bull. et Mem. Soc. De Radiol. Med. de Paris, 10:*110–113, 1922.
idem.: Radiography of base of skull. *J. de Radiol. et D'Electrol., 6:*253–263, June, 1922.

situation, but not necessarily having a similar function.

Homonymous, *n.*—Parts having similar forms of structure.

Homonymous Hemianopsia—Loss of sight in the corresponding right and left lateral halves of the visual fields. (cf. bitemporal hemianopsia.)

Homozygous, *adj.*—A zygote derived from genetically similar germ cells.

Honeycombing, *n.*—An appearance like a honeycomb seen with multiple small cysts or cavities in mycotic diseases, tuberculosis, and bronchiectasis. (See also Swiss Cheese Appearance.)

Honeycomb Lung—A reticular pattern of the parenchyma especially in the bases often indicative of bronchiectasis.

Honeycomb Pattern—A reticulated pattern in the lung suggesting bronchiectasis.

Hook Sign—A marked beak or hook filled with contrast medium seen at the edge of anular carcinoma of the colon.

Hookworm, *n.*—Uncinariasis caused by the ankylostoma or uncinaria and producing characteristic changes in the small intestinal pattern.

Hormone, *n.*—A chemical substance, representing a specific organic product of the cells of one part and transported through the body fluids of an organism and producing a specific effect on the activity of cells remote from its source. Example: Epinephrine from the adrenal cortex.

Horner-Spalding Sign—This refers to overlapping of skull bones in the unborn fetus as a sign of fetal death.[1,2]

Horner's Syndrome—A symptom complex caused by paralysis of the cervical sympathetic nerves manifested by ptosis and miosis of the eye on the same side as well as anhydrosis of skin.

Horseshoe Kidney—An anomalous condition in which the kidneys are fused across the midline in a horseshoe shape.

Hot, *n.*—In nuclear terminology, this means "characterized or rendered dangerous by the presence of substances that produce ionizing radiations."

Hot Cathode Tube—Any x-ray tube utilizing a heated cathode for its source of electrons. (Coolidge tube.)

Hot-Wire Meters—Instruments for measuring amperage or voltage utilizing the heating effect of the current upon a piece of wire.

Hour-Glass Bladder—An appearance of the urinary bladder with a central constriction.

Hour-Glass Stomach—A stomach which is constricted in the middle with pouches above and below like an hour-glass.

Humeral, *adj.*—Relating to the humerus.

Humerus, *n.*—The long bone of the upper arm.

Hurler-Pfaundler Syndrome—Same as Hurler's disease or lipochondrodystrophy. Also spoken of as dysostosis multiplex and gargoylism.

Hurler's Disease—Lipochondrodystrophy, dysostosis multiplex or gargoylism. This is a congenital anomaly of skeletal cartilage and bone marked by stunted stature, kyphosis, shortening of the bridge of the nose, cloudy corneae and usually mental deficiency.

Hyaline, *adj.*—Glassy; of a homogeneous and translucent appearance.

Hyaline Membrane Disease—A disease of newborn infants in which there is an acidophilic membrane extending over the trachea and bronchial tree into the terminal bronchioles and alveoli preventing adequate interchange of gases. This produces a fine, discrete linearity and nodularity throughout both lung fields with shadows of increased radiolucency interspersed among these nodular and linear areas.[3]

Hyaluronidase, *n.*—A ferment or enzyme having the ability of enhancing absorption of various substances when given subcutaneously or intramuscularly.

Hydatid, *n.*—A cyst, usually of the Echinococcus Granulosus, an inhabitant of the intestine of the dog in those countries having large sheep populations.

Hydatid Cyst[4]—Water filled cysts of the Echinococcus Granulosus most easily recognized in the lungs, but also may be present in other organs, notably the liver. (See also Air Crescent Sign, Morquio's Sign and Water Lily Sign.)

Hydatid Disease—A morbid condition in which cysts of the echinococcus are formed in lung and liver.

Hydatidiform Mole—A tumor developing in the uterus following an abortion, the cells of which are derived from the chorionic villi.

Hydramnios, *n.*—An excessive collection of fluid in the amniotic sac surrounding the embryo.

Hydranencephaly, *n.*—Internal hydrocephalus with almost complete absence of cerebral hemispheres.

Hydrarthrosis, *n.*—Manifested by fluid in a joint.

Hydrocephalus, *n.*—Excessive collection of fluid in dilated ventricles of the brain producing the internal variety; in external hydrocephalus there is enlargement of the head by excessive

[1] Horner, D. A.: Roentgenography in Obstetrics. *Surg. Gynec. Obst., 35:*67–71, 1922.
[2] Spalding, A. B.: A Pathognomonic sign of intrauterine death. *Surg. Gynec. Obst., 34:*754–757, 1922.

[3] Meschan, I., Marvin, H. N., Gordon, V. H., and Regnier, G.: The radiographic appearances of hyaline disease of the lungs in the newborn. *Radiology, 60:*383–390 March 1953.
[4] Melhem, Rafic E. and Freimanis, A. K.: Pulmonary Hydatid Cysts, scientific exhibit, RSNA, Chicago, Nov. 14–20, 1959.

collection of fluid in the subarachnoid pathways.

Hydrocephaly, *n.*—Same as hydrocephalus.

Hydroencephalocele, *n.*—Herniation of brain through a cleft of the skull and expanded with a sac containing fluid.

Hydromicrocephaly, *n.*—Internal hydrocephaly in an extremely small cranium.

Hydronephrosis, *n.*—Overdistention of kidney pelvis and calyces with urine. Dilatation of the kidney pelvis and calyces.

Hydropneumothorax, *n.*—A collection of fluid and air in the pleural space of the chest.

Hydrops, *n.*—Fluid in the tissues; dropsy.

Hydrosalpinx, *n.*—A blocked Fallopian tube with a collection of fluid within it.

Hydroureter, *n.*—Dilatation of a ureter usually due to obstruction.

Hygroma, *n.*—A cystic tumor containing serous fluid as in a cystic lymphangioma.

Hyoid Bone—A floating bone in the neck above the larynx which is suspended from the styloid processes of the temporal bones on either side. It is a U-shaped bone at base of tongue supporting muscles of deglutition.

Hypaque Sodium—A proprietary iodine preparation used for intravenous injection to opacify the urinary tract in excretory urography.

Hyper—*prefix*, indicating above, excessive or an increased degree, as hyperextension.

Hypercementosis, *n.*—Excessive growth of the cementum of the teeth.

Hyperfunction, *n.*—Excessive activity of a structure such as a gland having too much secretion.

Hypergonadism, *n.*—Excessive secretion of the male or female sexual glands.

Hyperkinetic, *adj.*—Excessively active.

Hypermotility, *n.*—Increased movement of a part.

Hypernephroma, *n.*—A malignant tumor derived from suprarenal tissue in the gland, or misplaced in the kidney; a form of renal carcinoma.

Hyperostosis, *pl.-es*, *n.*—Excessive production of bone.

Hyperostosis Cranii—An irregular area of increased density in the frontal bone and other cranial bones. (Also benign hyperostosis of the skull.)

Hyperostosis Frontalis Interna[1]—An irregular proliferation of bone protruding in patches from the internal surface of the cranial bones especially in the frontal region. (cf. Stewart-Morel-Moore Syndrome.)

Hyperostosis Leri—Flowing hyperostosis of bone or Melorrheostosis, a disease of bone resembling a drop of wax flowing along a candle.

Hyperparathyroidism, *n.*—A condition resulting from increase in secretion of the parathyroid glands. This produces generalized osteitis fibrosa cystica.

Hyperperistalis, *n.*—Increased speed of peristaltic action in the bowel.

Hyperpituitarism, *n.*—A disease caused by a tumor of the cells of the anterior lobe of the pituitary gland causing gigantism or acromegaly. Frequently these tumors arise from eosinophilic cells but may be chromophilic type or mixed.

Hyperplasia, *n.*—Excessive multiplication of normal cells, normally arranged in a tissue.

Hyperplastic, *adj.*—Associated with an overgrowth of tissue.

Hypersecretion, *n.*—Excess of secretion as of the gastric juices.

Hypersthenia, *n.*—High position of an organ such as stomach.

Hypersthenic, *adj.*—Having excessive tone or strength in any body organ or part.

Hypertelorism, *n.*—A deformity of the skull with the orbits widely separated and with flattening of the bridge of the nose.

Hypertension, *n.*—Higher than normal blood pressure.

Hypertensive, *adj.*—Marked by a rise in blood pressure.

Hyperthyroidism, *n.*—A disease of the thyroid gland characterized by excessive production of thyroxin; toxic goiter.

Hypertonic, *adj.*—Having more than normal muscular tone; also an increase of osmotic pressure.

Hypertonicity, *n.*—Excessive contraction or tonus as of the stomach or bowel.

Hypertrophic, *adj.*—Pertaining to hypertrophy, increased size of an organ.

Hypertrophic Arthritis—Inflammation of a joint associated with overgrowth of bone at the joint margin. (Degenerative arthritis, osteoarthritis, osteoarthropathy.)

Hypertrophic Gastritis—Inflammatory changes of the lining membrane of the stomach where the gastric rugae are edematous as seen radiographically.

Hypertrophic Pulmonary Osteoarthropathy—A shell-like thickening of the periosteum of the long and tubular bones associated with chronic pulmonary and cardiac disease. There is often associated clubbing of the finger and toe nails.

Hypertrophy, *n.*—Overgrowth of tissue; enlargement.

[1] Moore, Sherwood: Metabolic craniopathy, *Am. J. Roentgenol.*, *35:* 30–39, 1936.

Hypervitaminosis, *n.*—Excessive intake of vitamins producing changes in bones.

Hypervitaminosis A—Subperiosteal new bone formation in parallel lamellae particularly around the clavicles and ulnae and associated with increased brittleness of the bones. (cf. Caffey's disease.)

Hypervitaminosis D—Hypercalcemia is produced leading to increased deposition in the skeleton as well as in the soft tissues where deposits may be seen in the kidneys, lungs and stomach as well as in the skin. There is increased calcification of the distal metaphyses of the bones.

Hypo—*prefix* indicating below, beneath or a lessened degree of, as hypotonic.

"Hypo," *n.*—(Hyposulphite of soda.) Bath for the fixing of films; this dissolves all the silver salts which remain unaffected by light, or x rays.

Hypocalcemia, *n.*—Lower than normal calcium content of blood.

Hypochondrium, *n.*—Right and left upper lateral quadrants of the abdomen situated below the costal cartilages of the ribs on each side of the epigastrium.

Hypodermic, *n. or adj.*—An injection beneath the skin by means of a syringe and needle.

Hypodermoclysis, *n.*—Injection of saline solution under the skin to supply the body with fluid.

Hypogastrium, *n.*—That portion of the abdomen in the midline below the umbilicus and above the symphysis pubis.

Hypoparathyroidism, *n.*—A disease due to diminished or absent secretion from the parathyroid glands.

Hypophyseal Adenomas—Tumors of the hypophysis cerebri or pituitary gland of acidophilic, basophilic, chromophobic or mixed varieties.

Hypophyseal Tumors—New growths of the pituitary gland or hypophysis.

Hypophysis, *n.*—The pituitary gland.

Hypopituitarism, *n.*—A disease of the pituitary gland marked by diminution of the pituitary hormone and manifested by obesity, amenorrhea and loss of virility.

Hypoplasia, *n.*—Defective or incomplete development.

Hypoplastic, *adj.*—Marked by hypoplasia.

Hypoproteinemia, *n.*—Lower than normal protein content of blood.

Hypospadias, *n.*—Opening of the urethra on the inferior surface of the penis.

Hypostatic, *adj.*—Pertaining to or associated with settling of blood due to a feeble blood current.

Hyposthenic, *adj.*—Having less than normal tone or strength, or referring to low position of an organ as of the stomach.

Hypothenar Eminence—The fleshy mass of the palm at the base of the little finger. (cf. thenar eminence.)

Hypothyroidism, *n.*—Lowered basal metabolic activity due to diminished secretion from the thyroid gland and in severe cases, resulting in myxedema and cretinism. Also Gull's Disease.

Hypotonic, *adj.*—Having less than normal muscle tone.

Hypovitaminosis C—This is due to a lack of ascorbic acid or vitamin C and results in scurvy or Barlow's disease. Deficiency of this vitamin is most apt to occur in the latter half of the first year towards the beginning of the second year of life. In addition, capillary hemorrhages may affect the gums, conjunctivae, skin, intestines, bladder, kidneys and beneath the periosteum of the long bones. There may also be swelling at the costochondral junctions of the ribs.

Hypovitaminosis D—This deficiency disease is due to lack of vitamin D and results in the clinical and roentgenologic picture of rickets in a young child or osteomalacia in an adult where calcium and phosphorus are inadequately absorbed from the gastrointestinal tract.

Hypsicephaly, *n.*—(Hypsocephaly.) A skull having a high peak similar to acrocephaly or pointed skull.

Hysterosalpingogram, *n.*—A roentgenogram detailing the internal structures of the uterus and Fallopian tubes.

Hysterosalpingography—Radiograph of the opacified Fallopian tubes and uterus.

Hystogram, *n.*—A roentgenogram with opacification of the internal structures of the uterus.

I

-iasis—*Suffix* meaning a condition or the presence of.

Iatric, *adj.*—Of or pertaining to a physician; medical.

Iatrogenic, *adj.*—An abnormal state, such as anxiety or neurosis, arising in a patient through injudicious statements of the physician.

Iatrogenic Disease—Physician induced disease.

Icterus, *n.*—Yellowish discoloration of the skin and sclerae; jaundice.

Icterus, Familial Hemolytic—This is associated with one of the hemolytic anemias; namely, the spherocytic type.

Idiopathic, *adj.*—Pertaining to conditions without clear pathogenesis or disease without recognizable cause; of unknown origin.

Idiopathic Capsulitis—This is a painful condition in the hip of infants and children relieved completely by antibiotic therapy.[1]

Idiopathic Fibrosis of the Lungs—A diffuse progressive interstitial fibrosis of unknown etiology similar to the Hamman and Rich Syndrome, and described by L. L. Robbins.[2]

IHSA—Iodinated (I^{131}) human serum albumin.

Ileitis, *n.*—Inflammation of the ileum or a variant of Crohn's disease (Regional Enteritis). This is a nonspecific granuloma of the intestines described originally as confined to the terminal ileum, cecum, and ascending colon.[3]

Ileocecal Region—The region where the ileum joins the cecum.

Ileocecal Valve—Opening between terminal ileum and cecum.

Ileocolitis, *n.*—Inflammation of the ileum and colon.

Ileum, *n.*—The third portion of the small intestine. About 12 feet long. (cf. ilium.)

Ileus, *n.*—Obstruction to the normal flow of intestinal contents; it may be either mechanical or paralytic, dynamic or adynamic.

Iliac, *adj.*—Of or pertaining to the ilium.

Iliac Crest—Referring to the curving superior border of the ilium.

Iliac Spine—A prominent small projection on the anterior surface of the ilium spoken of as the anterior iliac spine, and used as an anatomical and radiographic landmark.

Iliolumbar, *adj.*—Pertaining to the iliac and lumbar regions.

Ilium, *pl.* *-ia,* *n.*—Hip bone. The flaring portion uniting with the sacrum and containing the acetabular fossa. (cf. Ileum.)

Image, *n.*—Used in radiography and photography to designate the impression made on an x-ray or photographic film by x rays or light.

Image Amplifier[4]—The x rays are allowed to fall on a fluorescent screen which is mounted in contact with the window in the end of the tube. On the inner surface of this window is a photoelectric layer of the transparent type, that is, light entering the surface from one side ejects electrons from the opposite side. These electrons are accelerated by a high potential placed across the highly evacuated tube, and are focused by a constant magnetic field applied axially. The electrons impinge on a phosphor layer on the opposite end, where they form an image identical to the original pattern. If the efficiencies of the fluorescent screen, the photoelectric surface, and the phosphor are high enough, and sufficient accelerating energy is supplied, a gain in brightness will result.

Imbricate, *v.*—To overlap like tiles or shingles.

Immunity, *n.*—In Biology meaning the ability to resist infecting microorganisms or their products through the production of antibodies which may be either natural or acquired.

Impacted, *adj.*—Lodged firmly in position; one end driven into the other as an impacted fracture; also an impacted tooth.

Impaction, *n.*—Spoken of with reference to feces or a fracture. In the case of the former, dried inspissated fecal material may be impacted in the lower bowel, especially the recto-sigmoid portion.

Imperforate, *adj.*—Congenital failure of an opening into the intestine as an imperforate anus; or into the vagina as imperforate hymen.

Implant, *n.*—In Radiology, the insertion of radioactive material in a needle or other container into a tissue for therapeutic purposes. In Pathology, malignant nodules attached to abdominal viscera and peritoneum.

Impulse Timer—An instrument used in radiography for fractional second exposures.

Inca Bone—The anomalous interparietal bone occasionally seen in the lambdoid suture.

Incisive, *adj.*—Relating to cutting or to the incisor teeth.

Incisor, *adj.*—Referring to one of the cutting or incisor teeth in the front of the jaws.

Incisura, *n.*—A cut, notch or incision as in the stomach, often situated opposite an ulcer crater.

[1] Edwards, E. G.: Transient synovitis of the hip joint in children. *J.A.M.A.*, *148*:30, 1952.

[2] Robbins, L. L.: Idiopathic fibrosis. *Radiology*, *51*: 459, 1958.

[3] Crohn, B. B., Ginsburg, L., and Oppenheimer, S. D.: Regional enteritis. *J.A.M.A.*, *99*:1323, 1932.

[4] Coltman, John W. Fluoroscopic image brightening by electronic means. *Radiology*, *51*: 359–367, Sept., 1948.

Incisura Angularis—An indentation in the greater curvature side of the stomach opposite the angulus or the pars angularis. This is a normal anatomical feature.

Inclusion Disease, Cytomegalic[1]—Focal Cerebral necroses seen in newly born and older infants followed by focal cerebral calcifications. The pattern of these calcifications is indistinguishable from that resulting from cerebral toxoplasmosis.

Incomplete Fracture, *adj.*—A fracture which does not extend completely through a bone.

Indeterminate Diagnosis—Indefinite, not precise or distinct; vague.

Induced Electric Current—A current which is induced from proximity to some other charge, or magnetic field.

Induced Radioactivity—This can be produced in an appropriate substance by bombardment with neutrons as in a cyclotron or atomic pile, where radioactive isotopes are made in this manner.

Induction, *n.*—(Of an electric current.) The production of an electric current in a coil, or other body, by close subjection to another bearing an electrical charge, such as, an induction coil or transformer.

Induction Coil—A piece of electrical apparatus consisting of two coils of wire; one, a primary coil, consisting of a few turns of heavy wire wound about an iron core; the other, a secondary coil, consisting of many turns of fine wire wound about (but insulated from) the primary coil. The apparatus is usually equipped with a make and break mechanism. The purpose of the apparatus is to increase the voltage.

Induration, *n.*—The quality of being hard; the process of hardening.

Industrial MPC—The maximum permissible concentration set for the small group of adult workers in atomic energy plants: the industrial MPC for strontium 90 is currently set at 2,000 strontium units per gram of calcium.

Infantile Cortical Hyperostosis (Caffey's Disease.)[2]—This disease which usually occurs within the first three months of life is characterized by local painful swellings in the soft parts of the long bones which are involved, particularly the mandibles, clavicles, humeri and the ribs. There is dense periosteal thickening, hyperostosis of the compact portions of bone and sclerosis of spongy portions of the diaphysis of the clavicles and mandible. (cf. Hypervitaminosis A.)

Infantile Hypertrophic Pyloric Stenosis—Hypertrophy of the circular muscle of the pylorus causing obstruction by stenosis of the canal so that the stomach cannot empty.

Infarct, *n.*—A sharply limited region of necrosis and hemorrhage in an organ, resulting from obstruction of the local circulation by a thrombus or embolus causing coagulation and interference with circulation and infiltration with foreign particles.

Infarction, *n.*—Stoppage of a canal or passage, especially by engorgement or block.

Infection, *n.*—The invasion of body tissues by pathogenic organisms.

Infectious, *adj.*—Capable of transmitting infection with or without actual contact.

Infective, *adj.*—Capable of producing infection by pathogenic microorganisms.

Inferior, *adj.*—Below or under.

Inferior Accessory Fissure—A supernumerary interlobar fissure in the medial portion of the right lower lobe.

Inferior Accessory Lobe—This is a medial and inferior accessory lobe which occurs occasionally at the lowermost portion of each lung and supplied by the medial basilar branch of the lower lobe bronchus.

Infiltrating, *adj.*—Invasion of the tissue or organ as by a neoplastic or infectious process.

Infiltration, *n.*—The permeation of a tissue by substances not normal to it.

Infiltrative, *adj.*—Spoken of a neoplastic or inflammatory process invading a tissue, such as infiltrative lesions of Tuberculosis in the lungs and infiltrative carcinoma of the pancreas.

Inflammation, *n.*—A natural reaction of the body to injury or irritation; the process by which blood cells and serum flow out from blood vessels into an infected or injured area and attempt to destroy the infection and repair the injury.

Influenza, *n.*—An infection, frequently of the respiratory tract, due to influenza bacilli.

Infra—*prefix* meaning below, beneath or under.

Infraclavicular, *adj.*—Situated beneath the clavicle.

Infraorbital, *adj.*—Lying under or on the floor of the orbit.

Infrapulmonary, *adj.*—Beneath the lungs as infrapulmonary empyema.

Infrared, *adj.*—Radiation of longer wave length than red light.

Infrascapular, *adj.*—Situated under or below the scapula.

Infrasellar, *adj.*—Beneath the sella turcica.

Infraspinatus, *adj.*—Beneath the scapular spine, infraspinous.

Infratentorial Lesions—Ones beneath the tentorium cerebelli, the sheath of dura dividing the cerebrum from the cerebellum.

[1] Wyatt, J. P., Saxton, J., and Lee, R. S.: Generalized cytomegalic inclusion disease. *J. Pediat.*, *36*:271–294, 1950.

[2] Caffey, J. and Silverman, W. A.: Infantile cortical hyperostoses; Preliminary report on a new syndrome. *Amer. J. Roentgenol & Rad. Ther.*, *54*:1, 1945.

Infundibulum, *n.*—Funnel shaped passage or body. Tube connecting the frontal sinus with the middle nasal meatus. Any renal pelvis division.

Inguinal Canal—The bilateral passage between the abdomen and the scrotum in the male and the labia majora in the female.

Inguinal Lymph Nodes—Lymphatic glands in the inguinal regions which drain the lower extremity.

Inguinal Region—The fold between the abdomen and thigh.

Inhalation, *n.*—The act of inspiration in the respiratory cycle or the drawing in of a medicated vapor with the breath.

Inherent Filtration—The glass envelope of an x-ray tube through which x rays must pass is described as the inherent filter to be distinguished from the added primary and secondary filters.

Inion, *n.*—A prominence on the external surface of the occipital bone; the external occipital protuberance.

Inlet, *n.*—The superior pelvic strait.

Inlet Contraction—Less than normal average measurements for passage of the fetus from the abdomen through the pelvic inlet.

Inner Zone—The medial one-third of the lung fields.

Innominate Aneurysm—An aneurysm of the innominate artery.

Innominate Bones—The large irregular pelvic bones, comprised of the ilium, ischium and pubis.

Inspiration, *n.*—The drawing in of air; act of inhaling.

Inspire, *v.*—Breathe in or to inhale; the opposite of expire.

Inspissated, *adj.*—Thickened, dried or rendered less fluid by absorption, evaporation or dehydration as of a cavity. Spoken of feces, ear wax and tuberculous cavities.

Insufficiency Fracture—A stress or march fracture. (cf. Umbau Zones and Looser's Transformation Zones.)

Insula, *n.*—An island.

Insular, *adj.*—Of or pertaining to an island.

Insulating Transformer—A transformer having a similar number of turns of wire in the primary and secondary coils, which serves to insulate either side of the circuit from the ground.

Insulation, *n.*—Material (usually a dielectric) used to prevent the escape or flow of an electric current. Prevents shorting-out of a circuit.

Integral Dose—The volume dose, expressed in gram-roentgens or gram rads, representing the total energy absorbed by a patient during exposure to x or gamma radiation.

Integrated, *adj.*—A harmonious relationship of the parts constituting the whole of anything.

Integrating Circuit—Recording at any time an average value for the number of events occurring in a unit time.

Integrating Dose Meter—A device consisting of an ionization chamber and measuring system to determine total amount of radiation delivered during an exposure or treatment.

Integrating Timer—A timing device of an x-ray machine which automatically adds up periods of activation, giving the total time of operation of the machine.

Integument, *n.*—The skin or covering envelope of the body.

Intensifier, *n.*—Used in photography to indicate a chemical solution for the intensification of an image on a photographic film.

Intensifying Screen—A screen composed of fluorescent material placed in close contact with an x-ray film to intensify the action of x rays in radiography. First developed in 1896 by Dr. Michael Pupin of Columbia University in collaboration with Thomas A. Edison.

Intensimeter, *n.*—An instrument designed to measure intensity of radiation.

Intensity, *n.*—Strength or concentration of x rays.

Inter—*prefix* meaning between, among. (cf. intra.)

Interarticular, *adj.*—Between joints.

Interatrial Septum—A partition between the auricles or atria of the heart.

Intercalary, *adj.*—Inserted between two others.

Intercarpal Joints—The joints between the carpal bones of the wrist.

Intercentral, *adj.*—Connecting or between two or more centers.

Interchondral, *adj.*—Between cartilages.

Intercondylar Notch—The large notch between the two femoral condyles.

Intercostal, *adj.*—Between the ribs, as intercostal nerves and vessels.

Interlobar, *adj.*—Between the lobes of the lung or brain.

Interlobar Fissure—Fissure between lobes as of the lung; long and short interlobar fissure.

Intermetatarsal Joints—The joints between the metatarsal bones of the feet.

Intermittent, *adj.*—Having a time interval between impulses

Interna, *adj.*—Within, on the inner side, as hyperostosis frontalis interna of the frontal bone.

Internal, *adj.*—Pertaining to the inside as opposed to the outside of the body.

Internal Conversion—A form of radioactive decay during which gamma rays from excited

nuclei cause ejection of orbital electrons from the atom.

Internal Radiation Hazard—Danger to an individual from radiaoctive material deposited within his body, especially the bones, as in radium watch dial painters.

Internal Resistance—The resistance which is present within a piece of apparatus; as for instance, the internal resistance of a battery.

International Critical Tables—A collection of scientific data compiled by the National Research Council.

Interosseous, *adj.*—Space between two bones as the interosseous membrane between the radius and ulna.

Interparietal Bone—An anomalous bone occurring in the lambdoid suture between the parietal bones with its apex at the Lambda. (Also "Inca Bone.")

Interpedicular Distance — This is a gradually varying distance in millimeters between the inner margins of the pedicles as shown on AP radiographs of the thoracic and lumbar vertebrae.

Interphalangeal, *adj.*—The joints between the phalanges, both proximal and distal.

Interposition of the Colon[1]—An anatomical variation characterized by interposition of the proximal portion of the transverse colon and the hepatic flexure beneath the right hemidiaphragm and the liver. (See also Chiliaditis' Sign).

Interrupter, *n.*—A mechanical or chemical device for the periodic make and break of an electric current; used chiefly with induction coils.

Interrupterless Transformer—A transformer which utilizes alternating current for its changes in a magnetic field and does not require an interrupter to vary the magnetic field.

Interspace, *n.*—Interval between two parts such as between ribs.

Interstitial, *adj.*—Relating to the spaces or interstices in any structure.

Interstitial Calcinosis—A disease process in which deposits of calcium lie in subcutaneous fatty tissues.

Interstitial Fibrosis—Laying down of fibrous tissue in the interstitial tissues between the normal structures.

Interstitial Therapy—Application of radium or other radioactive sources to tissues directly by insertion of needles or pearls.

Intertarsal, *adj.*—Joints between the tarsal bones of the foot.

[1] Chiliaditi, D.: L'hepatoptose avec interposition des visceres entre la foie et le coupole diaphragmatique, *Presse med.*, *8:* 6, 1911.

Intertrochanteric, *adj.*—The portion of the femur between the greater and the lesser trochanters.

Intertrochanteric Fracture—A fracture extending between the trochanters of the upper end of the femur.

Interureteric Ridge—An elevation in the urinary bladder between the two ureters.

Interventricular Septum—A partition between the ventricles of the heart.

Intervertebral, *adj.*—Situated between two adjacent vertebrae as the cartilaginous disc.

Intervertebral disc—The round cartilage containing the anulus fibrosus and the nucleus pulposus between two vertebral bodies.

Intervertebral Spaces—The spaces between the vertebral bodies occupied by the intervertebral discs. These are thinned or narrowed in degenerative disc disease.

Intestinal, *adj.*—Pertaining to the bowel.

Intestine, *n.*—That portion of the digestive tract extending from the stomach to the anus and divided into the large and small bowel.

Intra—*prefix*, meaning within, inside. (cf. inter.)

Intra-Articular, *adj.*—Within a joint.

Intracavitary Therapy—This form of radiation therapy is administered by means of tubes, single or in strings of two or more, containing radium or other radioactive material, inserted into body cavities.

Intracranial, *adj.*—Within the skull or cranium.

Intrahepatic, *adj.*—Pertaining to parts within the liver.

Intraluminal, *adj.*—Within the interior of any tubular structure.

Intraluminal Defect—A subtracting lesion such as a polypoid mass projecting from the mucosa into the lumen of the intestine.

Intramedullary, *adj.*—Within the central portion or medullar cavity of a bone.

Intramedullary Fixation—Fastening the broken ends of a bone together as by introduction of an intramedullary nail. (See chart p. 109.)

Intramedullary Nail—For holding fractures of a long bone, by insertion of the nail into the medullary or marrow cavity. (See chart p. 109.)

Intramural, *adj.*—Pertaining to a location within the wall of a structure.

Intraocular, *adj.*—Within the eyeball or globe. (cf. intraorbital.)

Intraoral, *adj.*—Within the mouth.

Intraorbital, *adj.*—Within the orbit, as distinguished from intraocular as in case of foreign bodies.

Intraperitoneal, *adj.*—Pertaining to a location within the peritoneal cavity.

Intrasellar Tumor—One within the sella turcica.

Intraspinal, *adj.*—Within the spinal canal.

Intrathecal, *adj.*—Within a synovial or tendon sheath; also within the coverings of the spinal cord.

Intrathoracic, *adj.*—Within the thoracic area.

Intrathoracic Thyroid—Usually a substernal thyroid gland.

Intratracheal, *adj.*—Within the trachea or wind pipe.

Intrauterine, *adj.*—Within the uterus.

Intravaginal Irradiation—Application of x rays directly to the uterine cervix by means of specially designed treatment cones.

Intravenous, *adj.*—Within a vein as an intravenous injection.

Intravenous Injection—Injection of drugs or opacifying media directly into a vein by puncturing the vein with a needle.

Intraventricular, *adj.*—Situated or occurring within a ventricle as of the brain or heart.

Intrinsic, *adj.*—Having origin within the structure or organ involved.

Intubation, *n.*—Pertaining to insertion of a tube into a hollow structure such as the trachea or the intestinal tract.

Intussusception, *n.*—A receiving within; specifically, the invagination or indigitation of a portion of the intestine into an adjacent portion as an ileo-colic intussusception.

Inverse Square Law—The law which is applied to all point sources of radiation, that the intensity of radiation is inversely proportional to the square of the distance. Example: If the intensity is 16r at 10 in. target-part distance, then at 20 in. it will be $16 \times (\frac{10}{20})^2 = \frac{16}{4} = 4$r.

Inversion, *n.*—(In photography.) The reversal of an image occurring with a lens system; (in roentgenology), the reversal of an image as seen by direct effect of rays on the retina of the eye; (in anatomy), inward rotation.

Invert, *v.*To turn inward.

Inverted Appendiceal Stump—A small pseudotumor formed within the cecum by the inverted stump of the appendix following appendectomy.

Inverted 3 Sign[1]—Described by Frostberg as an appearance at the ampulla of Vater indicative of carcinoma of the head of the pancreas. (See also epsilon sign of Frostberg).

Involucrum, *n.*—A covering or sheath, such as contains the sequestrum of a necrotic bone.

Involuntary, *adj.*—Unable to control by voluntary action.

Iodeikon, *n.*—The trade name given tetraiodophenolphthalein, a drug used for visualization of the gallbladder.

Iodine^{131} (Radioiodine)—A radioisotope of iodine used as a diagnostic tracer, or therapeutically, usually in thyroid disease. (See also Radioiodine).

Iodized Oil—Oil which contains iodine, in combination. Used as an injection for visualization of the bronchi, sinuses, etc. (Examples: Lipiodol; Pantopaque.)

Iodochlorol, *n.*—A proprietary medicine used for opacification of the bronchi in bronchography.

Ioduran, *n.*—A proprietary medicine used for opacifying the kidneys, ureters, and bladder.

Ion, *n.*—A small charged particle of an electrolyte bearing either a positive or negative charge.

Ion Exchange—A reversible interchange of ions between a particular solid material and a solution, such as in an ion exchange resin having a matrix of insoluble material mixed with fixed ions of opposite charge.

Ion Pair—Formed during the interaction of radiation and matter and usually considered as two particles of opposite charge, the electron and a positive atomic or molecular residue.

Ionization, *n.*—The process (usually chemical or electrical) by which a substance (electrolyte) is separated into ions. This renders it a conductor of electricity.

Ionization Chamber—A device designed to measure intensity of roentgen rays and other ionizing radiations in terms of charge of electricity associated with ions produced within a defined volume. (cf. Victoreen r-meter).

Ionization Density—The number of ion pairs in a given volume.

Ionization Path—The track or trail produced by ion pairs as an ionizing particle passes through matter.

Ionization Potential—The energy required to displace an electron from an atom with the formation of an ion pair.

Ionizing Event—The production of an ion or group of ions through interaction of radiation and matter.

Ionizing Radiation—The electromagnetic radiation which can produce ions by displacement of electrons from atoms.

Iopax, *n.*—A drug used for excretory pyelography.

Iron Core—A rod of soft iron around which wire is wound as for the windings of a transformer or induction coil.

Irradiate, *v.*—To subject a substance to radiation, as to irradiate milk; to shine or beam.

Irradiation, *n.*—The procedure of administering radiation. (cf. Radiation).

Irregular Bone—Neither a long or flat bone, example: vertebra.

Irregularity, *n.*—Irregular or broken surface.

[1] Frostberg, N.: Characteristic duodenal deformity in cases of different kinds of peri-vaterial enlargement of the pancreas. *Acta. Rad.*, *19*:164–173, 1938.

Irritable Colon—Excessive peristaltic activity in the large bowel.

Ischial Spine—A pointed projection of the ischium directed medially at the pelvic outlet.

Ischial Tuberosity—A large process of the ischium on which the body rests in the sitting position.

Ischium (Os Ischii, BNA) *n.*—The lower portion of the pelvic bone (os coxae, BNA) which supports the body's weight in sitting.

Iso—*Prefix*, meaning the same or similar.

Isobars, *n.*—Atoms with the same atomic weight but different atomic numbers. Example: Cadmium 113 has an atomic number of 48 while its isobar, Idium 113, has 49. One of two or more chemical substances having the same atomic weight but not necessarily the same chemical properties.

Isodose Charts—These are designed to show distribution of radiation in a medium by means of lines or surfaces drawn through points receiving equal amounts of radiation. These are available for many different types of x-ray beams, for radium applicators and for radioactive isotopes.

Isodose Curves—Equal doses of radiation shown on isodose charts.

Isomer, *n.*—One of several nuclear species that have the same number of neutrons and protons but are capable of existing for a definite time in different quantum states and with different energies and radioactive properties.

Isomeric Transition—When a nuclide decays to an isomeric nuclide of lower quantum energy, it undergoes isomeric transition.

Isotone, *n.*—One of several nuclear species having the same number of neutrons in their nuclei.

Isotope Carrier—The quantity of an element which may be mixed with radioactive isotopes of that element giving a ponderable quantity to facilitate chemical operations. (Also, carrier.)

Isotope Dilution Analysis—Chemical analysis of a mixture for a component based on adding a known amount of labeled component of known specific activity to the mixture followed by isolation of some of the component and measurement of its specific activity.

Isotope Effect—Chemical transformation or equilibria effected by the difference in mass between isotopes.

Isotopes, *n.*—(1) Atomic species in which all atoms have the same atomic number and also the same mass number. Example: Tritium is an isotope in that it consists exclusively of atoms having atomic number 1 and mass number 3. (2) Atomic species having the same atomic number but different mass numbers. Example: Hydrogen is a mixture of three atomic species that are isotopes with respect to each other. They all have the atomic number 1 but protium has the mass number 1 while deuterium and tritium have mass numbers 2 and 3 respectively.

Isotope Separation—When a mixture of isotopes of an element is separated into component isotopes or when the abundance of isotopes in a mixture is changed.

Isotopy (Isotopism), *n.*—The phenomenon of existence of isotopes.

Isotron, *n.*—A machine for electromagnetic separation of isotopes in which the ion source is of large area, rather than a slit as in the usual mass spectrography.

Isthmus, *pl.* *-mi.*, *n.*—A narrow passage or band connecting two cavities or parts; or a bony bridge connecting the articular processes as in a vertebra, the pars interarticularis.

Iter, *n.*—A passageway from one anatomical part to another as the aqueduct of Sylvius or iter between the third and fourth ventricles of the brain.

-itis—*suffix*, meaning inflammation of.

J

J.A.M.A.—Journal of the American Medical Association, published weekly. Office of the Editor, 535 N. Dearborn Street, Chicago 10, Illinois.

Jaundice, *n.*—Yellow discoloration of the skin and sclerae by bile pigments commonly associated with obstruction of the common bile duct. There are many other varieties e.g. painless, hematogenous, familial, newborn and non-obstructive.

Jaw, *pl.* **-s,** *n.*—The mandible containing the lower teeth and the maxilla containing the upper teeth, together forming the framework of the mouth.

Jejunal, *adj.*—Of or pertaining to the jejunum.

Jejunum, *n.*—The two-fifths of small intestine situated between duodenum and ileum.

Jewett Nail—A specially designed nail for fixation of the head and neck of the femur. (See chart on p. 108.)

Joint, *n.*—An articulation or place of union, more or less movable, between two or more bones.

Joint Mice—Loose bodies within a joint which may result from synovial chondromas or epiarticular osteochondromata which calcify and break off, and may cause locking or other disability of a joint.

Joule, *n.*—The unit of work, or energy, equal to 10,000,000 ergs, named in honor of the English Physicist James B. Joule.

Journal of Roentgenology, Radium Therapy and Nuclear Medicine, The American—(Abbr. Am. J. Roentgenol. Rad. Therapy & Nuc. Med.) Office of the Editor, 110 Professional Building, Detroit 1, Michigan. Official organ of the American Roentgen Ray Society and the American Radium Society. Published monthly by Charles C Thomas, Springfield, Illinois.

Judet Acrylic Prosthesis—An orthopedic appliance for application to the hip. (See chart p. 108.)

Juga Cerebralia—Little peaks on the inner table of the skull, especially prominent on cerebral surface of orbital plates.

Jugular, *adj.*—Of or pertaining to the neck or throat and to the jugular vein and foramen.

Jugular Notch—The upper margin of the manubrium sterni and a groove on the posterior border of the petrous portion of the temporal bone.

Junction, *n.*—The point of joining or uniting.

Juvenile Kyphosis—Osteochondritis of the thoracic vertebrae spoken of as kyphosis dorsalis juvenilis or Calve's[1] disease of the spine. Also Scheuermann's[2] Disease.

Juvenilis, *n.*—Immature or undeveloped, as in the thoracic vertebrae, osteochondritis dorsalis juvenilis.

[1] Calvé, J.: Localized affection of the spine suggesting osteochondritis of vertebral body with clinical aspect of Potts' disease, *J. Bone & Joint Surg.*, *7:* 41–46, 1925.
[2] Scheuermann, H.: Scheuermann's Krankheit (Kyphosis Juvenilis), *Fortschr. a. d. Geb. Röntgenstrahlen, 53:* 1–16, 1936.

K

Kaschin-Beck's Disease—A disease affecting the bones and joints, seen only in a small district of Siberia, of unknown etiology, but possibly due to pollution of drinking water with manure.

K Capture—A term meaning K-electron capture. Also refers to any orbital electron-capture process.

Keimbahn Theory—Germinal root theory of how the germinal cells reach the region of the ovary during embryologic development.

Keloid, *n.*—Hypertrophied scar tissue occurring following burns or other injuries, predominantly in the Negro race.

Kenetron Tube—A valve tube for rectification of high voltage current.

Keraphren, *n.*—A proprietary medicine used to opacify the gallbladder.

Kerkring's Folds—Transverse folds of mucous membrane in the small intestine; also spoken of as the valvulae conniventes, especially noticeable in the jejunum, giving it a feathery appearance on x-ray examination.

Kerley's Lines[1]—(A) Lines several inches long, rather ragged and radiating from the hilum, (B) Septal lines or horizontal linear shadows observed in the lower lateral lung fields, (C) Lines not strictly linear which interlace to produce a network termed reticulation. (cf. Fleischner's Lines).

Kernig's Sign—Inability to extend the leg when lying on the back with the homolateral hip in flexion.

Kerosene Aspiration—Induces a bilateral disseminated bronchopneumonia especially dense around each hilum with streaky shadows extending into each lung field with scattered areas of increased density.

Kev, *n.*—Kilo-electron-volts. A convenient energy unit of one thousand electron-volts.

Kidney, *n.*—Paired, bean-shaped retroperitoneal organs which excrete urine.

Kidney Stones—Calculi found in kidney pelvis or parenchyma. (cf. staghorn calculi.)

Kienbock Unit—An obsolete measurement of x-ray dosage said to equal 1/10 of an erythema dose.

Kienbock's Disease—The os lunate becomes smaller, flattened, increased in density and often fragmented. The cancellous structure is lost. Usually this follows an injury although classified as a form of osteochondritis.

Kilo—*prefix*, meaning one thousand; as kilogram —1000 grams, kilovolt—1000 volts.

[1] Kerley, Peter: In A Textbook of X-ray Diagnosis by British authors. Vol. 2, 2nd Ed., Philadelphia, Saunders, 1957.

Kiloton, *n.*—1000 tons.

Kilovolt, *n.*—1000 volts.

Kilovoltage, KV, *n.*—The factor in radiography which determines the penetration or quality of the x rays. The higher the kilovoltage the harder or more penetrating the x rays, the opposite being true for lower kilovoltage.

Kilovolt Peak (KVP)—The very highest voltage occurring during an electrical cycle.

Kirschner Wire—A wire of great strength used for traction in orthopedic surgery. (See chart p. 109.)

Klippel-Feil Syndrome—Shortness of the neck, limitation of head movements, and the growth of hair low down on the neck, associated with disease of suboccipital region.

Knee, *n.*—The joint or articulation between the condyles of the femur and the tibia.

Köhler's Disease—Osteochondritis of the tarsal scaphoid or navicular bone believed due to a form of aseptic necrosis. Also refers to osteochondritis of the distal heads of the second and third metatarsal bones and to osteochondritis of the primary ossification center of the patella.

Krinkle Mark (crinkle)—A crescentic mark on an x-ray film produced by the film being wrinkled before exposure.

KUB Film—An abbreviation indicating a plain radiograph of the abdomen to study the kidneys, ureters, and urinary bladder. (See also survey radiograph, scout film and preliminary film of the abdomen.)

Kümmel's Disease—A compression fracture of a vertebra usually appearing sometime after an injury. (Spondylitis traumatica tarda.)

Küntscher Cloverleaf Nail—An intramedullary nail designed for fixation of fractures of the femur. (See Chart p. 109).

Küntscher Intramedullary Nail—An intramedullary nail used for fractures of the forearm. (See chart p. 109.)

Küntscher Nested Intramedullary Nail—One used for fixation in tibial fractures. (See chart KVP—p. 109.)

Kymo—*prefix* meaning wave.

Kymogram, *n.*—A radiographic record produced by the kymograph.

Kymograph, *n.*—A piece of x-ray apparatus used in recording the range of motion of various organs, especially chambers of the heart throughout the cardiac cycle.

Kymography, *n.*—A method for recording rhythmic movements of an organ.

Kymoscope, *n.*—A piece of x-ray apparatus used in reviewing film taken with the kymograph

Kyphos, *n.* Localized hump at the apex of the affected vertebrae in kyphosis, especially in tuberculosis of the spine. (Pott's Disease).

Kyphoscoliosis, *n.*—Lateral curvature of the spine combined with kyphosis.

Kyphoscoliotic, *adj.*—Of or pertaining to kyphoscoliosis.

Kyphosis, *n.*—A convex backward curvature of the thoracic vertebrae; humpback, usually resulting from tuberculosis, osteochondrosis or fracture of the body of a vertebra.

Kyphosis Dorsalis Juvenilis—Osteochondrosis of the primary ossification centers of the vertebrae, Calve's[1] vertebra plana. Also osteochondrosis of the secondary centers of ossification, Scheuermann's[2] disease or kyphosis juvenilis.

[1] Calvé, J.: Localized affection of the spine suggesting osteochondritis of vertebral body with clinical aspect of Potts' Disease, *J. Bone & Joint Surg., 7:* 41–46, 1925.
[2] Scheuermann, H.: Scheuermann's Krankheit (Kyphosis Juvenilis), *Fortschr. a. d. Geb. Röntgenstrahlen, 53:* 1–16, 1936.

L

Labeled Compound—One consisting , in part, of labeled molecules. This compound or its fragments may be followed by observations of radioactivity or isotopic composition through physical, chemical or biologic processes.

Labeled Molecule—One containing one or more atoms marked by non-natural isotopic composition.

Labyrinth, *n.*—Communicating cavities and canals making up the inner ear. Dark room labyrinth consists of passageways designed to prevent light from entering a dark room without the use of doors.

Labyrinthitis, Petrous—Inflammation of the semicircular canals associated with petrositis.

Lacerated, *adj.*—An irregular or jagged wound as of the skin.

Lacerum, *n.*—A foramen in the base of the skull for the internal carotid artery.

Lacrimal Bone—One of the facial bones situated between the nasal bones and the ethmoid, frontal and maxillary bones. It forms a portion of the inner wall of each orbit.

Lacrimal Duct—Tear duct.

Lacrimal Gland—Tear gland.

Lacuna, *n.*—A depression in a bone as a defect or gap.

Lacunar Skull—(Lückenschädel.) One with multiple thinner areas or lakes in it giving the skull film a characteristic appearance.

Lag, *n.*—In radiology, to express the continued fluorescence from an x-ray fluoroscopic or intensifying screen, after it is no longer subjected to the radiation which gave rise to it.

Lambda, *n.*—The Greek letter "L" resembling an inverted "Y" and the name given to the junction of the sagittal and lambdoid sutures which resembles it.

Lambdoid Suture—The suture between the parietal bones and the occiput of the skull.

Lambdoidal, *adj.*—Shaped like the Greek letter "L," simulating an inverted Y; a skull suture. Also the lambdoidal fontanel in the newborn skull.

Lamella, *pl. -ae, n.*—A medicated disc of gelatin inserted under lower eyelid and against eyeball used as a local application, (2) A thin plate or scale as a layer of bone laid down in concentric fashion.

Lamellated, *adj.*—Composed of flat plates or leaves.

Lamina, *pl. -ae, n.*—The flattened part of either side of the arch of a vertebra; bony covering of neural arch.

Lamina Dura—The hard lining layer of the dental alveoli.

Laminagram, *n.*—A radiograph made with only one plane or lamina of a part in clear focus. (cf. also planigram, tomogram, stratigram, ordogram and body section radiography.)

Laminagraph, *n.*—A piece of x-ray apparatus used for roentgenographing a thin layer of tissue at any depth in the body without interference with the intervening structures. (See also body section roentgenography.)

Laminagraphy, *n.*—The process of preparing a laminagram. Note: Not laminography.

Laminated, *adj.*—Separated or divided into thin layers or plates.

Laminectomy, *n.*—An operative procedure in which the lamina of a vertebra is removed.

Land Camera—A polaroid type of camera that can produce an immediate print without the usual processing in a dark room.

Lantern Slide—A small positive transparent photographic plate, usually $3\frac{1}{4}'' \times 4''$, for projections of interesting and educational features seen in roentgenograms.

LAO—Left anterior oblique, referring to a position of the part either with reference to the x-ray tube or the film, at discretion of the radiologist. With reference to the fluoroscopic screen, taken to mean the left shoulder turned forward.

Laparotomy, *n.*—Abdominal incision for any operation on internal organs.

Larynx, *n.*—The voice box and vocal cords.

Latent Image—The invisible image produced on photographic or x-ray film by the action of light or x rays, before development.

Latent Period—The state of seeming inactivity between the time of exposure to an agent and initiation of the response.

Lateral, *adj.*—Refers to that portion of a structure, or part, which is the greatest distance from the mid-line; also, side or aspect. Opposite of medial.

Lateral Decubitus—A position in which the patient lies on either side and the x-ray beam is directed in a posteroanterior or an anteroposterior direction across the table, especially for the purpose of demonstrating change in fluid level.

Lateral Oblique—A projection in which a part is turned from a true lateral position a varying number of degrees, in order more clearly to outline a particular structure or organ.

Lateral Recumbent—A position in which the patient is supine or prone and the x-ray beam is directed horizontally across the table at right angles to the x-ray film. This position is utilized in myelography and in cases of intestinal obstruction.

Lateral Sinus—A venous channel located in the inner table of the skull near the mastoid process. This may be demineralized in acute suppurative processes or thickened by bone deposition in chronic ones.

Lateral Ventricle—An elongated cavity in the brain containing cerebrospinal fluid.

Latitude, *n.*—The range of exposure of an x-ray film permissible for a good diagnostic result.

Lattice, *n.*—In nuclear engineering, the arrangement of pieces of fissile material in an atomic pile. In x-ray diffraction studies, the arrangement of atoms in a crystal.

Laurence-Moon Biedl Syndrome—This is a dystrophy of adiposogenital tissues manifested by retarded skeletal development, mental deficiency, pigmented retinitis, and polydactylism, and is probably hereditary.

Law of Conservation of Energy—Energy can be changed in form, but can be neither created nor destroyed.

Law of Electrical Charges—Unlike charges attract; like charges repel.

Law of Inverse Squares for all Point Source Radiation—The intensity of radiation is inversely proportional to the square of the distance. (See also Inverse Square Law.)

Law of Magnetic Induction—Magnetic lines of force, cut at right angles, by a conductor of electricity, induce in that conductor an electric current.

Law of Magnetism—Unlike magnetic poles attract; like poles repel.

Law's Positions—Positions for radiographic examination of sinuses and mastoids, devised by Dr. F. M. Law.[1]

LD 50—A lethal dose of radiation which will kill 50 per cent of individuals of a large group of animals or organisms within a specified period.

Lead Apron—A lead impregnated rubber apron to protect personnel working in x-ray exposure room.

Lead Equivalent—The thickness of lead required to effect the same reduction in radiation dose rate under specified conditions as the material in question.

Lead Glass—Lead impregnated glass used in windows of control booths and in protective shields on fluoroscopic screens to protect radiologists and their technical assistants from scattered radiation.

Lead Impregnated Gloves—Leather protective gloves made by special process for impregnating the material with lead equivalent to at least 0.3 mm. Used during fluoroscopy for handling patient.

Lead Poisoning (Osteopathy)—Changes in the bones, indicative of heavy metal absorption.

Lead Protective Chair—Used by straddling the seat with the back in front during fluoroscopy. A lead impregnated apron hangs in front of chair, the back of which contains a sheet of lead of at least 0.5 mm. lead equivalent.

Lead Rubber—Rubber impregnated with lead, as in protective aprons, usually of 0.2–0.5 mm. lead equivalent.

Leakage Transformer—A transformer so constructed that the proportion of windings to the iron core is not satisfactory for full efficiency; the amperage output, therefore, is limited.

Leather Bottle Stomach—Diffuse thickening of the walls of the stomach so that peristalsis cannot occur and usually due to carcinomatous infiltration. Condition is also spoken of as linitis plastica.

Left Lateral Decubitus—A roentgenogram made with the patient lying on his left side with the film in front of him and the x rays directed from back toward the front cross-table, thereby producing a PA view. If the film is placed at his back and the x rays directed from front to back, an AP view will result.

Leg, *n.*—The portion of the lower extremity between the knee and angle.

Legg-Calvé-Perthes Disease[2,3]—A disease (osteochondritis) of the epiphysis for the head of the femur. (See also Perthes Disease.)

Leiomyoma, *n.*—A benign smooth muscle tumor, usually of the uterus, and spoken of as a fibroid.

Leiomyosarcoma, *n.*—A form of malignant tumor involving the smooth muscle coat of an organ.

Lenard "Rays"[4,5]—A cathode stream which has been drawn outside an x-ray tube through a thin aluminum window. This was accomplished by Philip Lenard, a German physicist, in 1892. In recent years, it has been carried to a much more extensive production by Coolidge in his hot cathode-ray tube.

Leontiasis Ossea (Osteitis deformans)—A disease of the facial bones giving the patient a lion-like expression. This may be a form of

[1] Law, Frederick M.: Roentgen examination of the mastoid processes. *Am. J. Roentgenol. & Rad. Ther., 31:*482, 1934.
idem.: Mastoids roentgenologically considered. *Annals of Roentgenology,* Paul B. Hoeber.
idem.: Radiography as an aid in the diagnosis of mastoid disease. *Ann., Otol., Rhin. & Laryng., 22:*635–637, 1913.

[2] Legg, A. T.: Obscure affection of the hip joint, *Boston M. & S. J., 162:*202–204, 1910.
[3] Calvé, J.: Sur Une Forme Particuliére de Pseudocoxalgie Greffée sur des Deformations caractéristiques de l'Extrémité Superieure du Femur., *Rev. de Chir., 30:* 54–84, 1910.
[4] Lenard, Philip. (Aachen) Absorption of cathode rays. *Wied. Ann. 56:*255, 1895.
[5] Etter, L. E.: Some historical data relating to the discovery of the Roentgen rays. *Am. J. Roentgenol. & Rad. Ther., 56:*220, 1946.

osteosclerosis affecting the facial bones from other cause than Paget's disease.

Leprosy, *n.*—A wasting disease affecting especially the skin and extremities.

Leptomeningeal Cyst—A fluid filled cyst on the periphery of the brain formed in the subarachnoid pathways or leptomeninges. (Post-traumatic cyst.)

Leriche's Syndrome—Occlusion of the distal aorta by thrombus or saddle embolus.

Leri Type—A form of polytopic enchondral dysplasia in which the patients have a stunted growth, marked lordosis of the lumbar vertebrae, short arms and hands and vertebral bodies which are only rarely wedge-shaped.

Lesion, *n.*—A diseased structure, morbid change, injury or wound.

Lesser Trochanter—The smaller and medial of bony prominences on the proximal end of the femur for the attachment of muscles.

Lethal Mutation—One leading to death of the offspring at any stage.

Letterer-Siewe's Disease (Reticuloendotheliosis)—Invasion of the spleen, liver and bone marrow by reticuloendothelial elements with enlargement of lymph glands and spleen and usually a purpuric rash. The condition is found in younger children and is considered a generalized reticulosis similar to Letterer-Christian's Disease. (cf. Schüller-Christian's Disease.)

Leucocyte, *n.*—White blood cell.

Leukemia, *n.*—A fatal disease involving the white blood corpuscles and blood forming organs.

Leukocytosis, —Increase in white blood cells of the blood.

Leukopenia, *n.*—Diminution in white blood cells of the blood.

Libido, *n.*—Sexual desire.

Licorice Powder—Used in laxatives for preparation of the intestinal tract for x-ray examination.

Lid, *n.*—Covering of an opening; the eyelid.

Lienography, *n.*—Radiographic visualization of the opacified spleen as in portosplenography.

Ligament, *n.*—A strong band of fibrous tissue usually found at a joint.

Ligament of Treitz—Fold of peritoneum from duodenojejunal junction to left crus of diaphragm.

Ligamentum Nuchae Ossification—This may occasionally be posterior to the fifth and sixth cervical spinous processes.

Ligamentum Teres—So-called "round ligament" of the hip joint.

Light Trap—A labyrinth so arranged that light cannot enter; it is used for entrance to a dark room.

Lilienfeld Tube—A hot cathode x-ray tube invented by Lilienfeld.

Limbus, *n.*—The border or edge of a part.

Lindau's Disease—A cerebellar angioma (See also Lindau-von Hippel.)

Lindau-Von Hippel Disease[1]—A combination of angioma of the cerebellum, which is usually cystic, and hemangioma of the retina, polycystic pancreas, and polycystic kidneys (cf. Hippel-Lindau's Disease.)

Linear, *adj.*—Like a line, such as a linear fracture. Also a linear shadow.

Linear Absorption Coefficient—The Greek letter Mu (μ) which expresses the fraction of a beam of radiation absorbed in a unit thickness of material.

Linear Accelerator—A machine arranged for accelerating particles by employing alternate electrodes and gaps arranged in a straight line and so proportioned that, when their potentials are varied in proper amplitude and frequency, particles passing through them receive successive boosts of energy.

Linear Amplifier—A pulse type amplifier wherein the output pulse height is in proportion to the input pulse height for a given pulse shape up to a point where the amplifier overloads.

Linear X-Ray Shadows—Described by Fleischner and Reiner.[2] These are horizontal linear shadows which may be constant or transient and often observed in the lower lateral lung fields of patients with chronic or acute pulmonary congestion. When these are persistent they are believed due to hemosiderin deposited in the interlobular septa. These are not the same as Fleischner's lines which are described as platelike or segmental areas of atelectasis.

Line Focus—A linear focal spot on the target of an x-ray tube.

Lines of Force—Imaginary lines along which magnetic lines of force act. These can be demonstrated by sprinkling iron filings on a piece of paper, and placing it over the magnetic field to be investigated.

Lines of Retzius—Lines of calcification or accretion seen microscopically in sections of the enamel representing successive layers of calcium.

Lingual, *adj.*—Of or pertaining to the tongue; the lingual surface of a tooth as opposed to its buccal surface.

Lingula, *n.*—A tongue-like structure especially lingula cerebelli, a tongue of cerebellum prolonged forward on upper surface of superior

[1] Von Hippel, Eugen: Ueber eine nahezu isolierte degeneration des ganglion retinae, Albrecht Von Graefes. *Arch. Fur Ophthal.*, *79*:545–557, 1911.

[2] Fleischner, F. G., and Reiner, L.: Linear x-ray shadows in acquired pulmonary hemosiderosis and congestion. *New England J. Med.*, *250*:900–905, 1954.

medullary velum; inferior portion of left upper lobe of the lung.

Lingular, *adj.*—Pertaining to a lingula or tongue; portion of left upper lobe of lung.

Lining System for Joint Relationship—A system of lining for the estimation of proper mechanical relationship of the bones at their various joints.

Linitis Plastica—A disease of the stomach characterized by marked thickening of the stomach wall; leather-bottle stomach.

Linkage, *n.*—In genetics, the situation where traits are inherited together owing to the presence of their genes in the same chromosome.

Lip, *n.*—The fleshy fold surrounding the orifice of the mouth and cervix uteri.

Lipin, (Lipid) *n.*—Term for fat and fat-like substance.

Lipiodol, *n.*—An opaque oil used for injection into the body cavities for the purpose of x-ray examinations.

Lipochondrodystrophy, *n.*—Hurler's Disease or gargoylism.

Lipoid, *adj.*—Oily.

Lipoid Granuloma—A chronic inflammatory change of the lungs marked by irregular triangular shadows extending outward from each hilum with the base directed toward it.

Lipoid Pneumonia—A form of inflammation of the lungs produced by oily substances not readily absorbed.

Lipoiodine, *n.*—A proprietary medicine used for opacification of the bronchi in bronchography.

Lipoma, *n.*—A fatty tumor.

Liposarcoma, *n.*—Sarcoma with fatty elements.

Lipping, *n.*—This term refers to small bony excrescences or osteophytes on the margins of articular surfaces of bone in degenerative arthritis. Lipping is the earliest manifestation of this degenerative change.

Liter, *n.*—A measure of volume in the metric system; 1,000 ml.

-lith—*suffix* meaning stones or calculi such as broncholiths.

-lithiasis—*suffix* meaning presence of calculi or stones as in nephrolithiasis and cholelithiasis.

Lithotomy—Incision for removal of stones.

Little's Disease—Lateral sclerosis producing spastic spinal paralysis.

Littre, *n.*—Glands of Littre: mucous glands found in the membrane lining the bulbous urethra.

Liver, *n.*—A large abdominal organ occupying the right upper quadrant of the abdomen, lying immediately beneath the diaphragm. Among its many functions it secretes bile and stores glycogen.

Livingston Intramedullary Bar—An orthopedic appliance for fixation of fractures. (See chart p. 109.)

Loading Capacity—Refers to heat loading capacity of an x-ray tube.

Lobar, *adj.*—Pertaining to a lobe of the lung.

Lobe, *n.*—Division of an organ such as the lungs and liver.

Lobstein's Disease—Fragilitas ossium or constitutional fragility of the bones where fractures may be produced by slight trauma.

Lobulated, *adj.*—Divided into lobules or having the shape of a lobule. (cf. loculated and multiloculated.)

Lobulation of Kidneys—Persistence of fetal lobulation.

Lobule, *n.*—A small segment or subdivision of a lobe.

Localization of Foreign Bodies—The accurate measurement of the location of foreign bodies with relationship to the surface and to adjacent structures.

Localized, *adj.*—To be confined to a restricted position.

Loculated, *adj.*—Containing or divided in loculi or small cavities.

Lodestone, *n.*—A piece of natural magnetic iron ore.

Löffler's (Loeffler's) Syndrome—A disease characterized by transient infiltration of the lungs along with an increase of the eosinophilic leukocytes in the blood and usually with only slight systemic manifestations. This is also referred to as Löffler's eosinophilia.

LogEgram, *n.*—Reproduction of a roentgenogram made by the logEtronic process.

LogEtronics, (LogEtronography), *n.*[1,2]—An electronic device for reproducing radiographs and automatically compensating for under or over developed areas. This method of printing is called "LogEtronic" because exposure (LogE) of a photographic material is not only controlled, but also generated by purely electronic means. LogEtronography, in its application to roentgenography, is intended (a) to simplify the task of making high quality reproductions of roentgenograms for publication, teaching, dissemination, and filing; and (b) to provide the radiologist with a new form of visual and diagnostic aid.

-logy—*suffix* or combining form; the Greek word meaning study or knowledge.

Long Bone, *n.*—Bone of the extremities having a shaft and articular ends. (cf. flat bones.)

[1] St. John, Elmer G., and Craig, Dwin, R.: LogEtronography, *Am. J. Roentgenol. Rad. Therapy & Nuclear Med.*, *78*:124–133, 1957.

[2] Gould, David M., and Walloch, Bob L.: An improved logEtronic method of copying roentgenograms, *79*:885–887, 1958.

Longitudinal, *adj.*—A term used to describe a fracture extending along the long axis of a bone. In the long axis of the body or an organ.

Loops of Henle—Uriniferous tubules at the apex of a medullary pyramid of the kidney.

Looser's Transformation Zones—These are transverse thin lines of increased density near the ends of long bones also spoken of as "umbau zones" and are believed to represent small insufficiency fractures or pathologic healing of them.

Lordosis, *n.*—Curvature of the spine with convexity forward; normal in cervical and lumbar region.

Lordotic, *adj.*—Relating to or affected with lordosis.

Lordotic Curvature—Having a convex curvature anterior to a vertical line.

Lordotic Position—Usually an AP view of the chest for apices of lungs, made with the patient leaning backward.

Lorenzo Screw and Plate—An orthopedic appliance for fixation of fractures of the head and neck of the femur. (See chart on p. 108.)

Lottes Intramedullary Nail—An orthopedic appliance for fixation of fractures of the tibia. (See chart on p. 109.)

Lower Esophageal Ring[1,2]—A shelf-like indentation in the lower esophagus above the vestibule occasionally seen in the distended esophagus. (cf. Schatzki's Ring.)

Lückenschädel Disease, *n.*—Lacunar skull or a disease of infancy in which there are many irregular gaps or defects in the vault of the cranium.

Lues, *n.*—Syphilis; lues venerea.

Luetic, *adj.*—Of or pertaining to lues or syphilis.

Luetic Aorta—Inflammation (aortitis) of the aorta, usually the ascending portion, caused by syphilis and characterized by calcified plaques of the wall.

Luetic Spondylitis—Inflammatory changes of the vertebrae due to syphilis.

Lumbar, *adj.*—Part of the back comprising the loins between the thorax and the pelvis.

Lumbar Ribs—Ribs arising from lumbar vertebrae.

Lumbar Spine—The portion of the vertebral column below the thorax which forms the posterior support of the abdominal cavity and is attached to the sacrum below. Correctly, should be called lumbar vertebrae.

[1] Schatzki, Richard and Gary, J. E.: Dysphagia due to a diaphragm-like localized narrowing in the lower esophagus-"lower esophageal ring." *Am. J. Roentgenol. & Rad. Ther.*, *70*:911–22, Dec. 1953.

[2] Templeton, F. E.: *X-ray Examination of the Stomach*, University of Chicago Press, 1944, pp. 106–112, "Occasional Prominent Ring-like Structure Seen Only in the Distended Esophagus, about 4–5 cm. above the Diaphragm."

Lumbar Vertebrae—The vertebrae below the thoracic vertebrae and above the sacrum; five in number.

Lumbarization, *n.*—A transitional vertebra adjoining the sacrum taking on the characteristics of a lumbar vertebra.

Lumbosacral, *adj.*—Pertaining to lumbar and sacral regions.

Lumbosacral Disc—The intervertebral disc between the fifth lumbar vertebra and the sacrum.

Lumbosacral Instability—Weakness of the low back which may be due to relaxation of ligaments or to faults in the neural arch or articular facets, and is also attributed to the plane in which the apophyseal joints are directed.

Lumbosacral Joint—The articulation between the fifth lumbar and the first sacral vertebra.

Lumbrical Muscles—The muscles of the hand or foot which are wormlike in shape and are attached to metacarpals and metatarsals.

Lumbricoides, *n.*—A form of nematode worm which may be found in the intestinal tract, commonly the ascaris lumbricoides.

Lumen, *n.*—The channel of a tubular structure; as, the lumen of a hypodermic needle.

Luminal, *adj.*—Of or referring to a lumen as of the ureter or intestine.

Luminescence, *n.*—Radiation coming from a substance as a result of previous action of some form of energy in the substance; for instance, the luminescence of phosphorus after exposure to sunlight.

Lumpy Jaw—This is usually due to actinomycosis of the mandible producing a chronic form of osteomyelitis with a draining sinus tract. The roentgenographic appearance is nonspecific.

Lunate Bone—Half-moon shaped bone or semilunar in the carpus or wrist. (cf. os lunatum BNA.)

Lung Fields—The shadows formed by the entire extent of the lungs on the radiograph.

Lung Markings—The appearance of the various components of the lungs on the radiograph; commonly the bronchovascular structures.

Lungs, *n. pl.*—The organs of respiration in which the oxygen of the air is absorbed by the circulating blood.

Lupus Erythematosus[3]—One of the collagen diseases which appears to arise from a hypersensitivity reaction and manifested by a butterfly rash, discoid skin lesions, systemic involvement, arthritis and positive L. E. Cell test.

[3] Rupe, Clarence E., and Nickel, Stewart N.: New clinical concept of systemic lupus erythematosus. *J.A.M.A.*, *171*:8, 1055–1061, Oct. 1959.

Luschka's Crypts—These are small outpouchings of the mucosa of the gallbladder.

Luschka's Foramen (*pl.* Foramina of Luschka)—This is a small semilunar opening on either side of the fourth ventricle at the lateral angle between the valvula tarini and the ligula. It is also called the apertura lateralis ventriculi quarti.

Lutembacher's Syndrome[1]—A form of congenital heart disease having a defect of the interauricular septum associated with mitral stenosis and enlarged right auricle.

Luxation, *n.*—Abnormal slipping of one structure on another at a joint or place of natural division.

Lymph, *n.*—The all pervading fluid in which the tissues are bathed; it offers a medium for exchange between the blood and tissue cells.

Lymph Glands (Nodes)—These serve as filters for lymph collected in the peripheral tissues on its way to the general circulation.

Lymph Node (Gland)—A collection of lymphoid tissue which forms a portion of the lymphatic system.

Lymphadenitis, *n.*—Inflammation of a lymph gland.

Lymphadenopathy, *n.*—Diseased lymph gland which may show enlargement on x-ray examination.

Lymphangitic Carcinomatosis—Metastasizing carcinoma along lymphatic channels.

Lymphangitic Metastases—Metastases of malignant neoplasms via the lymphatic vessels and glands.

[1] Lutembacher, R.: De la stenose mitrale avec. communiation interaureculaire. *Arch. D. Mal. Du Coeur.*, 9:237–260, 1916.

Lymphangitis, *n.*—Inflammation of a lymphatic vessel.

Lymphatic, *adj.*—Of or pertaining to the lymph, lymph glands or nodes.

Lymphatic Leukemia—Fatal blood disease characterized by enlargement of the lymph glands and usually increase in circulating lymphocytes.

Lymphatics, *n.*—The lymph vessels and glands which collect the lymph from the tissues.

Lymphoblastoma, *n.*—A malignant tumor composed of lymphocytes, a form of lymphosarcoma.

Lymphocyte, *n.*—One of the white blood cells having a relatively large, sharply defined nucleus and a small amount of cytoplasm.

Lympho-Epithelioma, *n.*—Malignant lymphomas arising from lympho-epithelial tissues especially the tonsils and adenoids. (Schmincke tumors.)

Lymphogranuloma Venereum—A contagious venereal disease which may also affect the large bowel.

Lymphography, *n.*—Radiographic visualization of lymph vessels by injection of opaque media.

Lymphoma, *n.*—Any tumor made up of lymphoid tissues.

Lymphopenia, *n.*—(Lymphocytopenia.) Relative decrease in the number of lymphocytes in the blood.

Lymphosarcoma, *n.*—A malignant tumor of the lymphatic glands.

Lysholm Grid—A stationary grid of fine lead strips which is used like a Potter-Bucky Diaphragm. Devised by Erik Lysholm, a Swedish Radiologist.

-lysis—*suffix* meaning breaking down or dissolution.

M

Macmillan's Position—A position for radiographic examination of the optic canals.

Macro—*prefix* meaning large.

Macrocephaly, *n.*—An unusually large skull.

Macrogenitosomia Praecox—(Pellizzi's Syndrome.) Precocious sexual development and body growth caused by a tumor of the pineal gland.

Macrogenitosomia Praecox Suprarenalis—Precocious bodily and genital development caused by over-activity of the adrenal cortex.

Macroscopic, *adj.*—That which can be seen with the unaided eye; without use of a microscope.

Madelung's Deformity—Distortion of the radius at its lower end, with ulnar displacement backward. (Radius Curves.)

Magenblase, *n.*—German word meaning the stomach bubble.

Magenstrasse, *n.*—German word designating the lumen of the stomach along the lesser curvature through which ingested material passes to the pylorus.

Magnet, *n.*—(Permanent.) A piece of iron possessing magnetic force which causes it to attract particles of iron, and thereby, obey the other laws of magnetism.

Magnetic Field—The range of magnetic force emanating from a magnet.

Magnetic Induction—The induction of magnetism in a magnetic substance placed within a magnetic field.

Magnetic Pole—One end of a magnet. That pole which when free to oscillate points toward the earth's magnetic north pole is called the north seeking or north pole; the end which points south is called the south pole.

Magnetron, *n.*—(1) A device for electromagnetic separation of uranium isotopes, (2) A vacuum tube for producing high frequency oscillations, especially in the ultra high frequency range, by reaction of an electron stream in a magnetic field.

Magnum, *n.*—The os magnum or capitate bone in the distal row of the carpals.

"Make" Contact—In electricity, to establish metallic contact between two conductors.

Mal—*prefix* meaning improper; as, malfunction, i.e., improper function.

-malacia, *n.*—*suffix* meaning wasting or softening.

Malar, *adj.*—Of or pertaining to the zygomatic bone.

Malar Bone (zygomatic bone, BNA)—One of the bones of the face producing the prominence of the cheek.

Malar Process—The process of the maxilla articulating with the malar bone. (Also zygomatic process.)

Malaria, *n.*—A recurrent disease characterized by chills and fever caused by the plasmodium malariae.

Malassez's Disease—Cystic degeneration of the testis.

Malformation, *n.*—Imperfect development of a part, usually congenital.

Malignancy, *n.*—Cancer. The condition of being malignant.

Malignant, *adj.*—Cancerous; tending to progress, severe or virulent. Resistant to treatment and characteristically recurring after removal.

Malignant Tumor—One having the ability of spreading to distant parts or metastasizing.

Malleolar, *adj.*—Pertaining to a malleolus.

Malleolus, *n.*—(1) Medial—The projection of bone at the lower end of the tibia which forms the bony prominence on the inner side of the ankle joint, (2) Lateral,—The lower end of the fibula forming the bony prominence on the outer side of the ankle joint.

Malleus, *n.*—Largest of three ear ossicles. It articulates with the incus and is attached to the tympanic membrane.

Malrotation, *n.*—Failure of a part to rotate into normal position during embryonic life. Exs: Malrotation of the colon or kidneys.

Malum Coxae Senilis—Degenerative arthritis (hypertrophic arthritis; osteoarthritis) of the hip joint. (See also coxa malum senilis and morbus coxae senilis.)

Mal-Union—Healing of a fracture in an undesirable position.

MA Meter—A ballistic meter registering milliamperage of an x-ray exposure.

Mammary Gland—The female breast.

Mammillary, *adj.*—Any nipple-like projection; tubercles on the superior articulating processes of the lumbar vertebrae.

Mammography, *n.*—Roentgenographic examination of the breasts.

Mandible, *n.*—The lower jaw bone.

Mandibular, *adj.*—Pertaining to the mandible or lower jaw.

Mandibular Canal—The canal in the mandible for the inferior alveolar vessels and mandibular nerve.

Mandibulofacial Dysostosis—In this congenital disease, there is recession of the chin, a large mouth, absent nasofrontal angle and changes in the skeleton such as oligodactylia, radioulnar synostoses, vertebral synostoses and facial mal-development. (See also Treacher-Collins Syndrome.)

Manubrium, *n.*—The upper bony segment of the sternum. That portion of the malleus resembling a handle.

Manus, *n.*—The hand or metacarpus as distinguished from the carpus or wrist.

March-Foot, *n.*—A disease of the metatarsal bones, produced by trauma from marching or continued standing on the feet.

March Fracture—Fracture of metatarsal bone not showing on initial examination but becoming evident by callus formation on later examination. (Also stress fracture.)

Marfan's Syndrome or Disease[1]—Association of bilateral extropia of the lens of the eye with arachnodactyly, and believed to represent a hereditary condition due to congenital changes in the mesoderm and ectoderm.

Marginal Spurs—Bony excrescences on the edges of articulating margins seen in degenerative arthritis.

Marginal Ulcer—Peptic ulcer occurring at the margin of a gastro-enterostomy opening. (Also Stoma ulcer.)

Marie-Strümpell's Disease[2,3]—A disease of the vertebral column resulting in complete bony ankylosis. (Rheumatoid arthritis of spine.)

Marrow (bone), *n.*—The soft material filling the medullary cavities of bones.

Marrow Hypofunction—Inability of the bone marrow to produce the normal cellular elements of the blood.

MA Selector—Button or lever by which desired milliamperage may be selected on an x-ray machine control panel.

Masks, *n. pl.*—Lead shields for protecting the area about the field of x-ray examination or treatment.

Mass, *n.*—A lump or tumor such as a space occupying mass, e.g. intracranial. In Physics, the amount of matter as measured by its inertia. Matter is habitually measured by its weight (gravity), which is satisfactory because the ratio of weight to mass is the same for all substances.

Mass Absorption Coefficient—The linear absorption coefficient (μ) per centimeter divided by the density of the absorber (p) in grams per cubic centimeter, which may be expressed as μ/p.

Mass Defect—Deficit between the entire mass of the nucleus and the sum of its component nucleon masses.

[1] Marfan, A. B.: Un cas de déformation congénitale des quartre membres plus prononcée aux extrémités characterisée par l'allongement des os avec un certain degré d'amincissement, *Bull. et mem. Soc. méd. d. hôp. de Paris, 13*:220, 1896.

[2] Marie, P.: Sur la spondylose rhizomelique. *Rev. de med., 18*:285–345, 1898.

[3] Strümpell, E. A. G. G.: *Lehrbuch der Speciellen Pathologie und Therapie der Innerin Krankheiten*, Vol. 2:2, p. 152, 1884.

Mass-Energy Equivalence—The rule that destruction of 1 gram of mass is equivalent to the release of 9×10^{20} ergs of energy.

Mass Number—The number of nucleons (protons plus neutrons) in a single atomic nucleus. Symbol: A.

Mass Spectrograph—A device for separating and recording atoms of different mass even though they be the same element or isotopes, by projecting them through a magnetic or electric field.

Massa Intermedia—A commissure or band crossing the third ventricle of the brain a little in front of the mid-point connecting the two thalami.

Masseter Muscle—The strong muscle of the jaw which aids in mastication.

Massive Idiopathic Atelectasis—A condition in which the lungs previously well aerated, suddenly without apparent cause, lose their air content and become atelectatic.

Mastication, *n.*—Chewing and mixing of food.

Mastoid, *n.*—The bony process of temporal bone behind the ear. Formed like a nipple or breast.

Mastoid Suture—The suture of the skull behind the mastoid process.

Mastoiditis, *n.*—Inflammation of the mastoid cells.

Maturation, *n.*—In genetics, gamete formation where the number of chromosomes in the germ cells is reduced to one-half of the number characteristic for the species.

Maxilla, *n.*—The upper jaw bone; the superior maxilla (paired).

Maxillary, *adj.*—Pertaining to the upper jaw.

Maxillary Antrum—The maxillary sinus or the antrum of Highmore.

Maxillary Sinus—One of the paranasal or accessory nasal sinuses located in the maxillary bone.

Maxillofacial Fracture—A fracture involving the maxilla and other bones of the face.

Maximum Permissible Concentration (MPC)—An amount of radiation that is believed to be relatively, but not necessarily completely, safe—according to present knowledge.

Maximum Permissible Dose (MPD)[4]—For occupational hazards 5r or 350,000 gm.r per year. The MPD to the gonads of the population of the United States as a whole from all sources of radiation up to age 30 should not exceed 0.5 r per person per year.

Mayer's Position[5]—A position for radiographic examination of the petrous portion of the temporal bone.

[4] National Bureau of Standards Handbook 59 for recommendations of National Advisory Committee on Radiation Protection.

[5] Mayer, E. G.: *Otologische Rontgendiagnostik*, Vienna, Julius Springer, 1930.

Maze, *n.*—A light-trap or labyrinth so made that light cannot enter a dark room because of a series of interposed baffles.

McLaughlin Navicular Screw—A specially prepared metallic screw for use in fixation of the navicular bone. (See chart p. 109.)

Mean Free Path—This is the mean distance a particle travels between collisions.

Meatus, *pl. -i, n.*—Opening at the end of a canal; as, the external auditory meatus.

Mecapion, *n.*—A device designed to measure output of an x-ray tube in roentgens.

Mechanical Ileus—Obstruction of the bowel from some mechanical obstacle. (cf. paralytic ileus.)

Meckel's Diverticulum—A congenital defect representing a remnant of the omphalomesenteric duct occurring near the end of the ileum.

Meconium, *n.*—The first intestinal discharges of a newborn infant.

Meconium Ileus—A form of ileus in infants resulting from cystic fibrosis of the pancreas where meconium is markedly increased in viscosity and blocks the excretory pancreatic ducts, resulting in absence of duodenal juices.

Medial, *adj.*—That portion of a structure or part which is nearest to the midline, as opposed to lateral.

Median, *n.*—A structure which is in the middle or central portion; the median plane.

Median Lethal Dose (MLD)—This is the amount of radiation required to kill, within a specified period, 50 per cent of the individuals in a large group of animals or organisms.

Median Palatal—A structure in the mid-portion of the palate.

Mediastinal, *adj.*—Of or pertaining to the mediastinum.

Mediastinal Shift—Displacement of the mediastinum to one side or the other as in obstruction of a bronchus, pneumothorax or pleural effusion.

Mediastinal Swaying—A swaying or shift of the mediastinum caused by a check valve type of obstruction in a bronchus where normal ingress and egress of air is prevented.

Mediastinum, *n.*—The middle compartment of the chest containing the trachea, esophagus, heart and great vessels.

Medical Research Reactor—(MRR)—A major experimental device at the laboratory and hospital of the Brookhaven Medical Research Center, Upton, N. Y.

Medopaque H—A proprietary drug used for opacification of the uterus and Fallopian tubes. It may also be used for cholangiography.

Medulla, *n.*—The bone marrow; the central substance of the kidneys and adrenals below the cortex.

Medulla Oblongata—The proximal portion of the spinal cord within the cranium.

Medullary Canal or Cavity—The inner hollow portion of a long bone containing the marrow.

Medullary Pin—A metallic pin for insertion into the medullary canal of a bone to align the fragments of a fracture.

Medulloblastoma, *n.*—A malignant tumor arising from the medulla, cerebellum or the spinal cord.

Meg—A Greek combining form meaning million.

Mega—*prefix* meaning large or great.

Megacolon, *n.*—Marked enlargement of the colon such as seen in Hirschsprung's disease or aganglionosis.

Megaesophagus, *n.*—Marked enlargement of the esophagus usually associated with achalasia.

Megalocephaly, *n.*—Enlargement of the cranium.

Megaloureter, *n.*—Enlargement of the ureter.

-megaly—*suffix* meaning enlargement.

Megaton, *n.*—A force equal to a million tons of TNT. A two-megaton hydrogen bomb is equal in power to all the conventional bombs exploded during the Second World War.

Megavolt—One million volts.

Meig's Syndrome—Fibromyoma of the ovary, associated with hydroperitoneum and pleural effusion (Hydrothorax).

Meiosis, *n.*—In Biology, division of the nuclei in which members of each pair of chromosomes separate and form different nuclei, thus reducing the number of chromosomes by half. In animals, this process is a part of the maturation of the germ cell.

Meissner's Plexus—An enteric submucosal plexus derived from the superior mesenteric plexus.

Melanoma, *n.*—A black pigmented mole.

Melanotic Sarcoma—An extremely malignant form of neoplasm arising in a melanoma.

Melorheostosis (Leri)—A type of flowing hyperostosis of bone in which the radiographic appearance resembles that of a drop of wax flowing along a candle.

Membrane, *n.*—A thin layer of tissue covering a surface.

Membranous, *adj.*—Of or pertaining to a membrane.

Mendosal Suture—A suture extending medially from the lateral angles of the occipital bone seen mostly in the newborn, but rarely persisting in adults.

Meningeal, *adj.*—Of or pertaining to the meninges.

Meningeal Arteries—The arteries found in the meninges covering the brain.

Meninges, *n. pl.*—The covering membrane of the spinal cord and brain.

Meningioma, *n.*—A tumor of the meningeal covering of the brain and spinal cord.

Meningitis, *n.*—Inflammation of the coverings of the spinal cord.

Meningocele, *n.*—An outpouching, usually congenital, of the meningeal membrane.

Meningoencephalitis, *n.*—Inflammation of the meninges and of the brain itself.

Meningoencephalocele, *n.*—Herniation of the meninges and the brain through a defect in the skull.

Meningomyelocele, *n.*—Herniation of the meninges and the spinal cord through a defect in the vertebral column.

Meniscectomy, *n.*—Excision of a meniscus or semilunar cartilage of knee.

Meniscus, *n.*—Concavo-convex lens. Interarticular fibrocartilage of crescent or semilunar shape in certain joints, especially the knee.

Meniscus Sign[1]—Described by Dr. Russell D. Carman of the Mayo Clinic as a characteristic contour of density and radiolucency of an ulcerated lesion in cancer of the stomach. (See also "Pad" Sign.)

Mental, *adj.*—Pertaining to the chin or lower jaw; the mandibular symphysis, and the mind.

Mental Foramen—The opening in the mandible for emergence of the dental nerve.

Mental Spines—Small bony points projecting posteriorly from the symphysis of the mandible.

Mento—*prefix* indicating the chin.

Mento-Frontal—A roentgenographic projection where the central ray passes through the mandibular symphysis and the upper portion of the frontal bone.

Mento-Vertical—A roentgenographic projection or axial view where the central ray passes from the mandibular symphysis through the vertex of the cranium.

Mermaid Deformity—A congenital defect in which the lower limbs are fused into one.

Mesenchymal Deformity—Disruption of one of the embryonic primordial tissues, the mesoderm.

Mesenteric, *adj.*—Pertaining to the mesentery.

Mesenteric Adenitis—Inflammation of the mesenteric lymph glands.

[1] Carman, Russell D.: Benign and malignant gastric ulcers from a roentgenologic viewpoint. *Am. J. Roentgenol.*, *8*:12, Dec. 1921.
idem.: A new roentgen-ray sign of ulcerating gastric cancer. *J.A.M.A.*, *77*:990–992, 1921.

Mesenteric Thrombosis—Occurrence of a thrombus within a mesenteric artery.

Mesentery, *n.*—The fold of peritoneum containing blood vessels by which the intestines are attached to the posterior wall of the abdominal cavity.

Mesial, *adj.*—Toward the middle line, especially of the dental arch.

Mesiodens, *n.*—A peg-shaped adventitious tooth which is sometimes seen in the upper jaw near the median line.

Mesocephaly, *n.*—A skull or head of medium length.

Mesoderm, *n.*—The middle of the three primitive embryonic germ layers, from which the connective tissue, muscle and the skeletal structures develop.

Mesodermal, *adj.*—Of or pertaining to the middle of the three primitive germ layers in the embryo.

Meson, *n.*—A synonym of mesotron, which denotes a unit intermediate in mass between an electron and a proton. An elementary charged particle produced momentarily in the earth's atmosphere by incoming cosmic rays lasting, on the average, only about 2 microseconds. It has a mass about 200 times that of the electron. Its charge may be either positive or negative. Curiously enough, this word meson is also used to denote the median anteroposterior plane of the body.

Mesonephros, *n.*—The mid-way stage in the embryonic development of the kidney.

Mesosigmoiditis, *n.*—Inflammation of the mesosigmoid.

Mesothelioma, *n.*—A benign tumor arising from the mesothelium, the true serous membrane covering the pericardium, peritoneum and pleura.

Metabolic, *adj.*—Pertaining to the building up and the breaking down of living material within the cell.

Metabolism, *n.*—The sum of anabolic and catabolic processes. The sum of the processes concerned in the building up of protoplasm and its destruction incidental to life.

Metabolite, *n.*—In Physiology, any product of metabolism.

Metacarpal Bones—The bones of the hand extending between the wrist and fingers.

Metacarpophalangeal Joints—Articulations between the metacarpal bones and the proximal row of phalanges.

Metacarpus, *n.*—The hand.

Metalix Tube—A type of x-ray tube constructed largely of metal.

Metallic Foreign Body (MFB)—A metallic opaque substance visible on x-ray examination in any location, but especially in the eye.

Metanephros, *n.*—The final stage in the embryologic development of the kidney.

Metaphase, *n.*—One of the steps in nuclear division where the divided chromosomes lie in a plane at right angles to the plane of the division spindle, midway between its poles.

Metaphyseal Flaring—Enlargement of the ends of the long bones proximal to the epiphysis, seen in rickets.

Metaplasia, *n.*—Change of one tissue into another as of cartilage into bone; excessive proliferation of cells which are not histologically or functionally useful in an organ or tissue.

Metasellar, *adj.*—At a distance from the sella as, for example, a tumor in the posterior fossa causing increased intracranial pressure and indirectly changes in the sella.

Metasellar Lesion—A brain tumor or other lesion remote from the sella indirectly causing pressure changes in it.

Metastable State—An excited nucleus which returns to its ground state by emission of a gamma ray over a measurable half-life.

Metastasis, *pl. -es, n.*—Movement of bacteria from one part of the body to another, change in location of a disease or of its manifestations or transfer from one organ or part to another; applied to secondary malignancies arising at a distance from primary growth.

Metastatic, *adj.*—Pertaining to metastasis.

Metatarsal Bones—The bones of the foot between the tarsal bones and the proximal row of phalanges.

Metatarsophalangeal, *adj.*—Joints between metatarsals and phalanges.

Metatarsus, *n.*—The foot itself, beyond the tarsal bones.

Metatarsus Inversus—Inversion of the foot as in talipes equinus, a variant of club foot.

Meter, *n.*—An instrument used for measurement; a measure of length, in the metric system 100 centimeters or 39.37 inches.

Metopic Suture (Frontal suture, BNA)—A suture in the mid-portion of the frontal bone found in the newborn and in five to seven per cent of adults.

Metrosalpingography, *n.*—Opacification of the uterus and the Fallopian tubes by opaque media.

Metrotubography, *n.*—Opacification of the uterus and uterine tubes by opaque media.

Mev, *n.*—Symbol meaning million electron-volts.

Meyer's Nomogram—A method for determining the frontal area of hearts of children between the ages of three and sixteen using teleroentgenograms.

MFB (*abbr.*)—Metallic foreign body.

Michel Clips—Tiny metallic strips for closure of wounds. (See chart on p. 109.)

Micro—*prefix* meaning small.

Microcephalic, *adj.*—Of or pertaining to an unusually small skull.

Microcephaly, *n.*—An unusually small skull.

Microfarad, *n.*—A unit of electrical capacity equal to one millionth of a farad. The capacitance of a condenser charged with one millionth of a coulomb produces a potential difference of one volt.

Microfilm, *n.*—Miniature film for recording sundry data, x-ray films, records, etc. for convenient filing.

Microgram, *n.*—One millionth of a gram or one thousandth of a milligram. It is represented by the Greek letter γ (gamma), and the symbol "1γ" should be read "one microgram."

Micrometer, *n.*—An instrument for extremely accurate fine measurements.

Micron, *n.*—An extremely small unit of length; one-millionth of a meter, one thousandth of a millimeter, designated by the symbol μ, which should be read "one micron."

Micropaque, *n.*—A proprietary preparation used in barium enema x-ray examination of the colon.

Microscopic, *adj.*—So fine in structure that a microscope is required to perceive it.

Microsecond, *n.*—One millionth of a second.

Micturition, *n.*—Act of urination or emptying of the urinary bladder.

Middle Lobe Syndrome—Atelectasis of the middle lobe of the lung.

Mikulicz's Disease—Lymphoid tissue replacement of glandular structure of lacrimal and salivary glands.

MIL, *n.*—A unit of length, one thousandth of an inch.

Miliary—Resembling a millet seed; the presence of particles of this size scattered throughout an organ or on the surface of a part.

Miliary Tuberculosis—Acute generalized tuberculosis with minute tubercles in the affected part of the organ.

Milkman's Syndrome[1]—Multiple spontaneous idiopathic symmetrical fractures of both tubular and flat bones described by Dr. Louis A. Milkman, and probably related to fatigue or stress.

Milk of Calcium Bile—A condition in which the bile in the gallbladder is filled with excess of calcium salts causing it to be opaque to x rays in its natural state. This situation would be confusing after administration of opaque medium to show the gallbladder if a plain film of the abdomen were not first taken.

Milk Teeth—The deciduous or baby teeth.

[1] Milkman, Louis A.: Multiple spontaneous idiopathic symmetrical fractures. *Am. J. Roentgenol.*, *32*:622, 1934.

Miller-Abbott Tube—A long tube, having two lumina, one distal with a weighted end and an opening in its proximal end used to decompress the intestine in obstruction.

Milli—*prefix* meaning one thousandth.

Milliammeter, *n.*—Or milliampere meter; a meter which measures milliamperes of current.

Milliampere, *n.*—One one-thousandth of an ampere.

Milliampere Seconds—The product of time of an x-ray exposure and the milliamperage used. This factor determines the degree of blackness of a film.

Millisecond, *n.*—One thousandth of a second.

Minimal, *adj.*—The smallest amount recognizable.

Minometer, *n.*—A device for detection of very small quantities of radiation that may be received by persons working with x rays or radioactive substances.

Miscarriage, *n.*—The premature expulsion of viable fetus from the uterus.

Mitosis, *n.*—In Biology, nuclear division in which daughter nuclei come to have the same number and kinds of chromosomes as the parent nucleus, and characteristic of most divisions other than those involving meiosis.

Mitotic Lesion—An expression used to describe a malignant neoplasm when it is not desired to so inform the patient.

Mitral, *adj.*—Of or pertaining to the bicuspid valve in the left side of the heart between the left atrium and left ventricle.

Mitral Configuration—A silhouette of the heart having an appearance suggestive of mitral valvular disease.

Mitral Insufficiency—Regurgitation of blood back into the left atrium from the left ventricle during systole.

Mitral Lesion—Any involvement of the mitral valve of the heart.

Mitral Regurgitation—A flow of blood backward into the left atrium from the left ventricle during systole because of failure of the mitral valve to close.

Mitral Stenosis—A disease of the mitral valve of the heart in which the opening is almost completely closed.

Mitral Valve—The valve in the left side of the heart between the left auricle and the left ventricle.

Mobility, *n.*—The degree of movability of a structure or organ: for example, the mobility of the stomach would be the degree to which it could be moved by the radiologist in palpating the abdomen. (cf. motility.)

Moderator, *n.*—A material containing atoms of low atomic weight, used in a nuclear reactor to moderate or slow down neutrons by collision.

Modiolus, *n.*—Central pillar or axial part of cochlea extending from the base to the apex, in the middle ear.

Moe Plate—An orthopedic appliance for fixation of hip fractures. (See chart on p. 108.)

Molar, *n.*—The three large posterior teeth on each side of upper and lower jaws.

Molding, *v.*—Refers to changes in the shape of the skull by overriding of the cranial bones during parturition.

Molecular—*adj.* Of or pertaining to a molecule.

Molecule, *n.*The smallest fragment into which a substance can be divided without losing its chemical properties. An extremely small particle of matter; composed of aggregations of atoms.

Momentum, *n.*—The product of the mass and the velocity of a body: that is, cgs units: gm.-cm./sec.

Moniliasis—One of the mycotic infections of the lungs caused by the thrush fungi, Candida albicans.

Monitoring, *v.*—(1) Radiological surveys made periodically or continuously to determine the amount of ionizing radiation or radioactive contamination present in any occupied region, as a safety measure for purposes of health protection, (2) Area monitoring: Determination of the level of radiation or of radioactive contamination in any particular area such as a building, room or equipment, (3) Personnel monitoring: Survey of any part of an individual, of his breath or excretions, or any part of his clothing.

Monochromatic, *adj.*—Having the same wave length.

Monochromatic Radiation—X rays of the same quality or wave length.

Monocyte, *n.*—A large white blood corpuscle.

Monoenergetic Radiation—Particular radiation of a given type such as alpha, beta, neutron, etc., in which all of the particles have the same energy.

Monophen, *n.*—A proprietary medicine used for opacification of the gallbladder.

Monostotic, *adj.*—Single bone involvement of a disease such as fibrous dysplasia (cf. polyostotic.)

Monro, Foramen of—The interventricular foramen, connecting the anterior, medial and inferior portions of the lateral ventricles of the brain.

Monster, *n.*—A newly born individual who, through faulty congenital development, is incapable of performing vital bodily functions and otherwise shows marked variation from normal morphology of his species.

Monstrosity, *n.*—A congenitally defective fetus —a monster.

Monteggia's Fracture—Fracture of proximal end of the ulna and dislocation of the head of the radius.

Moore Blade Plate—An orthopedic appliance used for fractures of the neck and shaft of the femur. (See chart on p. 108.)

Morbus Coxae Senilis—Degenerative arthritis of the hip joint in an older individual. (See also Malum coxae senilis, coxa malum senilis.)

Morgagni, Foramen of—The foramen in the diaphragm just posterior to the gladiolus of the sternum. Site of a diaphragmatic hernia of the retrosternal type.

Morphine, *n.*—A drug used to allay pain.

Morphologic, *adj.*—Of or pertaining to form or structure.

Morphology, *n.*—Science of external structure and form without regard to function.

Morquio's Disease—Familial osseous symmetrical dystrophy. (Osteochondrodystrophy.) Named for Louis Morquio, a Montevideo physician.

Morquio's Sign—A radiolucent crescent of air found in echinococcus cysts of the lung after a small rupture. Air then occupies the potential space between the pericyst and the ectocyst. (See also Air Crescent Sign).

Mortise, *adj.*—A mortise joint as , for example, the ankle joint.

Morton's Foot—Neuralgia of the metatarsophalangeal joint of the third or fourth toes.

Motility, *n.*—The rate of motion such as, peristaltic action of an organ. (cf. mobility)

Motion, *n.*—Blurring of an x-ray image on a film due to movement of the subject, the film or x-ray tube during exposure.

Motor, *n.*—A motor so wound that it will turn with the same number of revolutions as the generator producing the current that runs it.

Motor Meal—A meal given with barium sulphate in gastrointestinal examination, to investigate the motility of this tract.

Mottled, *adj.*—Condition marked by discolored areas (mottling) or irregular densities; irregular or spotty; of varying density.

Mottling, *n.*—Irregular; of uneven density.

Mouth, *n.*—An orifice or opening into a cavity or canal. The first portion of the alimentary tract in which mastication occurs.

Moving Field Therapy—Rotational or pendulum type application of radiation therapy where the portals are constantly changing.

Moving Grid—A synchronous or reciprocal Bucky diaphragm moving according to a preset time of exposure, or continuously.

MPC—The maximum permissible concentration for the total population of the world, with its high percentage of children, pregnant women, and other groups especially sensitive to radiation injury. The general population MPC for strontium 90 in bone is currently 66 strontium units per gram of calcium.

M.R. & P.—Medical Radiography and Photography, a quarterly technical journal published by Eastman Kodak Co.

MRR—Abbreviation for medical research reactor at the Medical Research Center and Hospital, Brookhaven National Laboratory, Upton, N. Y.

Mu, *n.*—The Greek letter u frequently used to denote one micron or the millionth part of a meter. When used in this sense, the symbol should read "micron."

Mucocele, *n.*—Enlargement of the lacrimal sac-a mucous cyst; a mucous polypus, usually associated with the frontal and maxillary sinuses.

Mucocele of the Appendix—A mucinous tumor which may occur within the appendix.

Mucoperiosteum, *n.*—Periosteum having a mucous surface, as in parts of auditory apparatus.

Mucormycosis, *n.*—[1] This is a fungus infection caused by several different strains of Mucoraceae affecting the lungs, paranasal sinuses, central nervous system, external auditory canal, skin and nails. (See also cerebral mucormycosis and rhinomucormycosis)

Mucosa, *n.*—The mucous membrane.

Mucosal, *adj.*—Pertaining to a mucous membrane.

Mucosal Glands—Ones which secrete mucus.

Mucosal Pattern—The light and dark shadows of the rugal folds shown on x-ray examination.

Mucous, *adj.*—Of or pertaining to mucous membrane.

Mucous Colitis—An affection of the colon with secretion of large amounts of mucus.

Mucoviscidosus, *n.*—A generalized disease marked by cystic fibrosis of the pancreas with increased viscosity of the pancreatic secretions, plugging of the bronchi and bronchioles by viscous thickened secretions followed by emphysema and interstitial fibrosis of the lungs.

Mucus, *n.*—The mucilagenous secretion from a mucous membrane.

Mueller (Müller) Maneuver—After forcible expiration, an attempt at inspiration with the nose and mouth held closed. (cf. Valsalva Maneuver.)

Muliebria, *n.*—The female external genitalia.

Mulsopaque, *n.*—A proprietary drug used for cholangiography.

[1] Gabriele, Orlando F., Mucormycosis. *Am. J. Roentgenol. Rad. Ther. & Nucl. Med., 83:2,* pp. 227-235, Feb. 1960.

Multangular, *adj.*—Having many angles or corners; the greater and lesser multangular bones in the carpus (wrist).

Multiforme, *adj.*—Having many appearances as in erythema multiforme.

Multiloculated, *adj.*—Having many cells (locules); also polycystic.

Multipara, *n.*—A woman who has borne more than one child.

Multiphase, *adj.*—An electric current having many phases.

Multiple, *adj.*—More than one.

Multiple Calcified Foci—Numerous small scattered calcifications seen in healed or stable primary tuberculosis or histoplasmosis.

Multiple Cartilaginous Exostoses—Diaphyseal aclasis or multiple hereditary exostosis, a form of dyschondroplasia or chondrodysplasia.

Multiple Myeloma—A malignant tumor of bone characterized radiographically by numerous sharply circumscribed defects with no reactive sclerosis. These defects are most common in the skull, vertebrae and long bones.

Multiple Sclerosis ("MS")—A disease marked by widely scattered areas of sclerosis in the central nervous system.

Multiplication Factor—In nuclear engineering, the number of neutrons produced for every neutron disappearing in a chain reaction system or atomic pile. If the factor is equal to one, or greater, the chain reaction proceeds, but where the factor is less than one, the chain reaction cannot maintain itself.

Musculature, *n.*—The muscles related or attached to any part.

Mutation, *n.*—Permanent, genetically transmissible change in form, quality, or some other characteristic of an offspring compared to those of its parents.

Mutation, Gene—Precipitate and permanent change in a gene.

Mutation, Lethal—One which leads to death of the offspring at any stage.

Mya's Disease—Dilatation of the colon present at birth. (Hirschsprung's Disease.)

Myasthenia Gravis—A disease manifested by extreme weakness of the muscles with the frequent manifestation of dysphagia.

Mycosis Fungoides—Fungating malignant tumor arising in an area of pruritic dermatitis.

Mycotic Infections of the Lungs—The various fungi or mycoses affecting the lungs and which resemble pulmonary tuberculosis manifestations in many ways are aspergillosis, actinomycosis, torulosis, blastomycosis, histoplasmosis, coccidioidomycosis, moniliasis and sporotrichosis.

Myelo—*Prefix* denoting the spinal cord or bone marrow.

Myelocele, *n.*—Herniation of the spinal cord through an opening in the vertebrae.

Myelography, *n.*—Roentgenographic method depending on introduction of a contrast material (Pantopaque) into the subarachnoid space around the spinal cord.

Myeloma, *n.*—A tumor of the bone marrow.

Myelomeningocele, *n.*—Protrusion of both the spinal cord and its membranes in association with spina bifida.

Myelophthisic Anemias—These are anemias due to bone marrow hypofunction and include those associated with leukemia, lymphoma, idiopathic marrow fibrosing processes, etc.

Myelosclerosis with Myeloid Metaplasia[1]—Widespread, diffuse, overall increase in bone density usually involving long bones of upper and lower limbs, pelvic girdle, thoracic cage and vertebrae. These changes are associated with anemia of varying degrees of severity and hepatosplenomegaly. (Same as agnogenic myeloid metaplasia.)

Myenteric Plexus of Auerbach—The sympathetic nerve plexus in the muscular coat of the intestine.

Myiasis, *n.*—An invasion of the tissues or cavities of the body by larvae of dipterous insects.

Mylohyoid Ridge—A ridge at the edge of the mylohyoid sulcus on the inner surface of the ramus of the mandible leading to the opening of the inferior dental canal.

Myocardial, *adj.*—Concerning the myocardium.

Myocardial Infarction—An infarct involving the heart muscle.

Myocardium, *n.*—Heart muscle.

Myocele, *n.*—Herniation of a muscle thorugh its sheath.

Myoma, *n.*—A benign tumor of muscle tissue, frequently found in the uterus and called a fibroid.

Myositis Ossificans—Calcium deposit in the muscles. Inflammation of muscle tissue generally due to traumatism or to contiguous inflammation, diasthetic states or parasites.

Myxedema, *n.*—A disease characterized by lowered metabolism from thyroid insufficiency.

Myxochondroma—A malignant tumor of bone sometimes complicating multiple cartilaginous exostoses, composed of myxomatous and chondromatous elements which may give rise to widespread metastases.

Myxomatous Cyst, Myxoma—A benign tumor, cystic or cystoid,—one with parts which are fluid enough to resemble cysts.

[1] Jacobson, Harold G., *et al.*: Agnogenic myeloid dysplasia. *Radiology, 72:5,* May 1959.

N

Naphthylamines, *n.*—A compound containing the naphthol radical, $C_{10}H_7$.

Naris, *pl.-es,* *n.*—The nasal aperture; the pyriform fossae.

Nasal Bone—The bone for the nose, paired, with a dividing suture.

Nasal Cavity—The nasal fossa connecting the naris with the nasopharynx.

Nasal Fossae, *pl.*—The paired nasal cavities.

Nasal Polypi—Myxomatous, jelly-like growths, usually pedunculated, springing from the mucous membrane of the nasal cavity.

Nasal Septum—The partition between the two sides of the nose.

Nasal Sinuses—The air spaces in the bones adjacent to the nose. (The paranasal sinuses or accessory nasal sinuses.)

Nasion, *n.*—An anatomical point taken as the mid-portion of the nasofrontal suture.

Nasoalveolar, *adj.*—Relating to the alveolar process of the maxilla and the adjacent nasal cavities.

Nasopalatine, *n.*—Pertaining to the nose and the hard palate.

Nasopharyngeal Malignancy—Any malignant tumor of the nasopharynx as the so-called lymphoepithelioma or Schmincke tumor frequently extends from the nasopharynx and invades the base of the skull where it may be detected on axial views.

Nasopharynx, *n.*—Part of the pharynx situated above the soft palate. (Postnasal space.)

Natural Selection—From the theory of Charles Darwin that the fittest will survive in the competition of nature.

Nausea, *n.*—The sensation of a desire to vomit.

Navicular, *n.*—(Scaphoid.) A small bone of the wrist, in the proximal row.

Neck (of a bone), *n.*—A constricted portion beneath the head of a bone; as, the neck of the humerus or femur, divided into a surgical and anatomical site.

Neck of Humerus—The constricted portion below the head.

Necrosis, *n.*—Death of tissue, as by gradual degeneration. Aseptic necrosis; radiation necrosis.

Necrotizing Papillitis—A severe form of inflammatory change of the optic disc or of the renal papillae.

Neer Humeral Head Prosthesis—A specially prepared orthopedic appliance for the head of the humerus. (See chart p. 109.)

Negative, *n.*—Used in photography to indicate the reversed image on a photographic film formed in photographing an object.

Negative Charge—An unstable condition of the atomic structure in which electrons are increased beyond the normal number.

Negative Pressure—Less than atmospheric pressure.

Neo-Cholex, *n.*—A proprietary preparation to be given instead of a fat meal for emptying the gallbladder.

Neo-Iopax, *n.*—A proprietary preparation used by intravenous injection for opacification of the urinary tract in excretory urography.

Neon Bulb—A small electric bulb filled with neon gas, used to indicate the direction of flow of an electric current.

Neoplasm, *n.*—New growth; tumor.

Nephritis, *n.*—Inflammation of the kidney.

Nephrocalcinosis, *n.*—Generalized calcification of the kidney.

Nephrogram, *n.*—An outline of the entire kidney structure by opacifying media.

Nephrography, *n.*—The process of opacification of the kidney structure by intravenous or retrograde introduction of opaque media.

Nephrolithiasis, *n.*—Kidney stones.

Nephroptosis, *n.*—Dropping or descent of a kidney from its normal location.

Nephrosclerosis, *n.*—Induration and contraction of the kidney from overgrowth of interstitial connective tissue.

Nephrosis, *n.*—A chronic non-inflammatory disease marked by edema and uremia, probably due to destruction of epithelium of the renal tubules.

Neptunium, *n.*—Element number 93, produced artificially. The isotope, neptunium 239, is the radioactive parent of plutonium 239, an atomic explosive. Its atomic number is 93 and atomic weight 239.

Nerve, *n.*—A dense white cord made up of nerve fibers arranged in bundles and held together by a connective tissue sheath, through which stimuli are transmitted to or from the central nervous system.

Neufeld Nail—A nail and plate used for fractures of the head and neck of the femur in orthopedic surgery. (See chart p. 108.)

Neural Arch—The posterior portion of a vertebra formed by its laminae and isthmi.

Neuralgia, *n.*—A painful affection of a nerve.

Neurinoma (Neuroma), *n.*—A benign tumor of nerve tissue.

Neuroarthropathy, *n.*—Pathological changes occurring in joints because of alterations in their nerve supply.

Neuroblastoma, *n.*—A neoplasm arising from embryonic nerve cells especially of the sympa-

thetic nervous system or adrenal medulla, most frequently found in fetuses and children. Also neuroblastoma sympathicum embryonale.

Neuroepithelioma, *n.*—A glioma or malignant tumor of nerve tissue.

Neurofibroma, *n.*—A connective tissue tumor of the nerve fiber fasciculus.

Neurofibromatosis, *n.*—Multiple circumscribed nerve tissue tumors, also termed Von Recklinghausen's disease. (cf. osteitis fibrosa cystica.)

Neurofibrosarcoma, *n.*—A malignant tumor containing both neural and fibrous tissue components.

Neurogenic, *adj.*—Pertaining to or having nerve origin.

Neurogenic Arthropathy—Neuro-arthropathy or Charcot's Joints manifested by degenerative changes such as sclerosis of the subchondral bone, marginal fractures and loose bodies in the joints. Joints affected by this disease become like a "bag of bones."

Neurogenic Colitis—Inflammatory changes in the colon arising from disturbances of its nerve supply.

Neurogenic Tumor—One derived from nerve tissue.

Neuroma, *n.*—A tumor of a nerve fiber. A tumor composed of ganglion cells, or cells of nervous origin.

Neuropathic, *adj.*—Relating to any disease of the nervous system.

Neurosis, *n.*—A functional disorder of the nervous system.

Neurotrophic, *adj.*—Pertaining to the nerves which have to do with nutrition.

Neurotrophic Arthropathy—Joint changes caused by disturbance in the nerve supply of the joints, for example Charcot's joint.

Neurotrophic Osteopathy—These changes are seen mostly in the small bones of the hands and feet and are manifested by pointing and tapering of the distal ends which gradually disappear. Similar disturbances are also seen in Sudeck's atrophy and in the atrophy of disuse. (cf. Ainhum.)

Neutrino, *n.*—A hypothetical, electrically neutral elementary particle. Unlike the neutron which has a mass roughly equal to that of the proton, the neutrino has a very small mass variously given as equal to or less than that of an electron.

Neutron, *n.*—An electrically neutral particle of about the mass of a hydrogen atom.

Neutrophil, *n.*—The polymorphonuclear leucocyte, one of the white blood cells, having granules in the cytoplasm and the most common type of the white blood cells, taking a neutral stain.

Niche, *n.*—A crater or hole as seen in an ulcer eroding a surface. In a roentgenographic study where a hollow viscus is filled with opaque medium, the niche projects beyond the normal lumen of the organ thus indicating excavation as by a crater. (cf. Incisura.)

Nicholas' Disease—(Nicholas'—Favre Disease.) The fourth venereal disease or benign inguinal lymphogranulomatosis named for two French Physicians.

Nidus, *n.*—A cluster, nestlike in structure; a focus of infection; a nucleus or origin of a nerve. Also the radiopaque center of an osteoid osteoma.

Niemann-Pick's Disease—One of the reticuloendotheliosses resembling xanthomatosis where irregular punched-out defects are found in the skull and other bones caused by deposition of lipoids. (cf. Hand-Schüller-Christian Disease, Letterer-Siewe and Eosinophilic Granuloma.)

Nipple, *n.*—A small papilla or teat found on the mammalian breast for the suckling young.

Nocardiosis, *n.*—Actinomycosis.

Nodal Points—One of two points on the axis of an optical system which are so situated that a ray falling on one will produce a parallel ray emerging through the other.

Nodes, *pl., n.*—Enlarged segments of the lymph system i.e., glands usually from inflammation or infiltration, as by neoplastic disease.

Nodes, Heberden's—Enlargements of the distal interphalangeal joints of the hands in hypertrophic osteoarthropathy. (Osteoarthritis.)

Nodose—Transverse partitions of a longitudinal structure or a structure having nodes or knotlike swellings.

Nodular, *adj.*—Having a lumpy consistence; composed of nodules.

Nodulation, *n.*—Having a nodular appearance.

Nodulous, *adj.*—Nodular or nodose.

Non-Conductor (Dielectric)—A substance such as rubber which may be used as an insulator because it does not conduct heat or electricity.

Non-Opaque, *adj.*—Radiolucent or permeable to x rays as cholesterol gallstones which must, therefore, be demonstrated by the indirect method of cholecystography.

Nonossifying, *adj.*—Showing no tendency to form bone.

Non-Osteogenic Fibroma (of Lichtenstein and Jaffe)[1]—A benign tumor not showing any osteoblastic elements. This occurs usually in the distal femur, proximal tibia or less often in the distal tibia or ulna. It closely resembles ossifying fibroma and fibrous dysplasia of bone.

Non-Rotation of the Colon—Failure of the colon

[1] Jaffe, H. L. and Lichtenstein, L.: Non-osteogenic fibroma of bone. *Am. J. Path.*, *18*:205–221, 1942.

to rotate into its normal position during embryological development. Also malrotation.

Non-Screen (No Screen) Film—A specially prepared film of wide latitude for use in cardboard holders for examining small skeletal parts.

Non-Union—Failure of fractured bones to reunite as by normal callus formation.

Non-Visualization—Failure of an organ such as the gallbladder to opacify after giving opaque medium by mouth or intravenously.

Norma Basalis—An anatomical base line extending from the superior edge of the external auditory meatus to the inferior border of the orbit. (cf. Reid's base line.)

Normal Solution—A normal solution of sodium chloride would be the amount represented by the molecular weight of this salt dissolved in a liter of solution.

Normal Temperature and Pressure—(Standard conditions.) 0°C. and 76 cm. of water pressure.

Notching, *n.*—Scalloping as of the border of a rib or other bone.

Notochord, *n.*—Primitive spinal cord, the remnants of which are represented by the nuclei pulposi of the intervertebral discs.

Nuchal, *adj.*—Nape of the neck.

Nuchal Bone—The nuchal tubercle or tip of the spinous process of the seventh cervical vertebra causing a prominence on the back of the neck.

Nuchal Line—Pertaining to the neck or nucha, nape of the neck.

Nuclear, *adj.*—Referring to the nucleus of an atom or cell.

Nuclear Energy—Power derived from fissionable materials as in an atomic pile or reactor.

Nuclear Fission—Transformation of nuclei of atoms characterized by splitting of a nucleus into at least two other nuclei with the release of a relatively large amount of energy.

Nuclear Fusion—Coalescence of two or more atomic nuclei.

Nuclear Medicine[1]—Any application of nuclear energy in medical practice, as use of suitable radioisotopes in diagnostic tracers and others in radiotherapy.

Nuclear Reactor—An elaborate apparatus in which nuclear fission may be carried on by a self-supporting chain reaction. Components of such a reactor are as follows: (1) fissile material or fuel such as uranium or plutonium, (2) moderating material, (3) a reflector to conserve escaping neutrons, (4) provision for heat dissipation and (5) measuring and control elements. The term "pile" is synonymous with that of "reactor."

Nuclear Weapons—Atomic and hydrogen bombs or missiles armed with nuclear warheads.

Nucleic Acid—A component of the cell nucleus, comprising a union between phosphoric acid, ribose or desoxyribose and the four bases: adenine, guanine, cystosine and uracil.

Nuclei Pulposi, *pl.*—Gelatinous masses in the center of the intervertebral discs.

Nucleon, *n.*—A proton or neutron. This term is used when referring to these two types of heavy particles found in the atomic nucleus.

Nucleonics, *n.*—Technology and equipment related to nuclear devices.

Nucleoprotein, *n.*—Nucleic acid combined with protein.

Nucleus, *n.*—The central positively charged portion of the atom, which is supposed to contain the mass of the atom, about which the electrons revolve in orbit. Nucleus of a cell refers to an ovoid or rounded body containing chromosomes, lying within the cytoplasm.

Nucleus Pulposus—A semi-elastic gelatinous body located in the disc between the vertebrae, acting as a hydraulic shock absorber of the spine.

Nuclide, *n.*—An atomic species of a single atomic number and a single mass number.

Nummular, *adj.*—A lesion shaped like a coin or discoid such as the so-called "coin lesion" of the lungs.

Nutrient, *adj.*—Supplying nourishment or promoting growth.

Nutrient Artery—A blood vessel which furnishes nourishment to a tissue.

Nutrient Artery Groove—Radiographically, a linear radiolucency in a bone which may be mistaken for fracture.

[1] Aebersold, Paul C.: The development of nuclear medicine. *Am. J. Roentgenol. Rad. Ther. & Nuc. Med.*, 75:6, June, 1956.

O

Oat Cell Carcinoma—A malignant form of bronchiogenic carcinoma.

Obelion, *n.*—An anatomical point at the vertex of the skull where a line connecting the parietal foramina crosses the sagittal suture.

Oblique, *adj.*—Extending diagonally through a bone, as a fracture; a position in which the x rays penetrate the part at more or less of an acute angle. Also, films made of the heart midway between PA and lateral, as right and left anterior oblique. (RAO-LAO)

Oblique Orbital Line (Etter's Line).[1]—In the PA and PA oblique (Water's View) of the skull, a thin line of increased density extending diagonally from the lateral orbital area, downward and medially a varying distance; a composite cross-section of the squamozygomatic surface of the greater wing of the sphenoid bone and the temporal surface of the frontal bone.

Obliterate, *v.*—To completely remove.

Obliteration, *n.*—Removal, extinction or complete occlusion of a part by means of surgery, degeneration or disease.

Obliterative Arachnoiditis—Closure of the subarachnoid spaces following inflammatory changes in the meninges.

Obstetric, *adj.*—Of or pertaining to the practice of obstetrics or midwifery.

Obstetrician, *n.*—One who practices obstetrics.

Obstetrics, *n.*—The medical specialty of midwifery; having to do with the parturient woman.

Obstipation, *n.*—Intractable constipation.

Obstruction, *n.*—An interference with the natural flow; a condition interfering with normal flow, as in intestinal obstruction.

Obstructive Emphysema—Overdistention of the alveoli of the lung with air from partial obstruction of a bronchus.

Obturator Foramen—The oval opening in the lower portion of the pelvis adjacent to the hip joint.

Occipital—Concerning the back of the head or cranium; a cranial bone. (cf. sincipital.)

Occipital Bone—The flat bone which forms the back of the head.

Occipital View of the Skull—An AP oblique view taken with the occiput in contact with the film. (The Towne-Chamberlain projection.)

Occipito-Atlantoid (Atloid) Articulations—Joints between occipital condyles and articular facets of the atlas.

Occiput, *n.*—The back of the head. (cf. sinciput.)

Occlusal Film—Film placed between the occlusal surfaces of the teeth, with the x-ray beam directed caudad or cephalad to record the dental arches in occlusion.

Occlusal Plane—A surface or plane passing between the occlusal surfaces of the teeth, parallel with the alveolar processes.

Occlusion—Closure of a passageway or cavity, as of a vessel. (cf. atresia.)

Occlusive Disease—Obliteration of the lumen of a blood vessel as endarteritis obliterans.

Ochronosis, *n.*—Deposition of a yellow pigment in various tissues including cartilage of the joints, muscles, sclera, mucous membrane of the lips and skin of the ears, face, and hands.

Ocular, *adj.*—Of or pertaining to the eyes.

Ocular Hypertelorism—Increase of the normal space between the eyes.

O.D.—Oculus dexter, the right eye. (cf. O.S., the left eye.)

Odontoblasts, *n.*—The cells lining the pulp cavity of a tooth which form dentine.

Odontocele, *n.*—An alveolodental cyst.

Odontoid, *adj.*—Tooth-like.

Odontoid Process (Dens, BNA)—The tooth-like process of the second cervical vertebra (axis) which articulates anteriorly with the first cervical vertebra (atlas).

Odontome (Odontoma), *n.*—A tumor having its origin in dental tissues which are usually encountered in the mandible but may also be seen in the maxilla where they press upward into the floor of the maxillary sinus producing a dense filling defect.

Off Center Position—A position for making radiographic examination of the superficial structures without interference of the structure lying in close proximity; used especially in chest radiography.

Ohm, *n.*—The unit of electrical resistance, named for George Simon Ohm, a German physicist.

Ohm's Law—Amperes = Volts/Ohms, that is, the current in a circuit is equal to the electromotive force divided by the resistance.

-oid—*suffix*, meaning like.

Olecranon, *n.*—The large posterior process of the proximal ulna projecting behind the elbow joint and forming the bony prominence of the elbow.

Olecranon Fossa—The depression on the posterior surface of the lower end of the humerus into which the olecranon process fits during

[1] Etter, L. E.: New method for roentgen anatomical study of the skull. *Radiology, 53*:394–402, Sept. 1949.
idem.: Detailed roentgen anatomy of the orbits. *Radiology, 59*:4, pp. 489–503, Oct. 1952.
idem.: *Atlas of Roentgen Anatomy of the Skull.* Springfield, Illinois, Charles C Thomas, 1955, pp. 137–143.

extension of the elbow. (cf. epitrochlear foramen.)

Oligodactylia, *n.*—Missing fingers or toes. Those most frequently affected are the thumb which may be undersized or absent, and also the little finger.

Oligodendroglia—Adventitial cells found in the central nervous system, with characteristic vinelike processes.

Oligodendroglioma, *n.*—A brain tumor composed of oligodendroglia.

Ollier's Disease[1]—Multiple hereditary enchondroma, a form of dyschondroplasia.

-ology—A combining form from the Greek meaning study, science or knowledge.

Omental Band—Pertaining to the omentum; the peritoneal fold supporting the viscera.

Omental Hernia[2]—Diaphragmatic hernia of the omentum and intestine either retrosternal or parasternal in type, and passing through the foramen of Morgagni.

Omentum, *n.*—Folds of peritoneum connecting the stomach and transverse colon, hanging down in front of the intestines like an apron.

Omphalocele, *n.*—A herniation through the umbilicus.

Oncology, *n.*—Branch of medicine embracing study and treatment of tumors.

Oogenesis, *n.*—The developing process concerned with maturation of egg cells.

Opacification, *n.*—A growing opacity, as of the cornea or lens; as of a hollow structure to visualize it by x-ray examination following administration of an opacifying medium.

Opacity, *n.*—An object impervious to light.

Opaque, *adj.*—Impenetrable by light or x rays of diagnostic quality range. (cf. Radiopaque.)

Opaque Media—Any contrast material which may be introduced into a body cavity or structure to render it radiopaque to the roentgen rays.

Opaque-Plastic, *n.*—A light, absorbing material used as a compensating filter in radiographing structures of varying density.

Operating Voltage—This term is applied to radiation detection instruments, and is that voltage required across the electrodes in a detecting chamber for proper detection of an ionizing event.

Opisthion, *n.*—The center point on the posterior and lower margin of the foramen magnum. Opposite to the basion.

Opposing, *adj.*—Opposite parts; antagonistic; forces in contrary positions.

Optic, *adj.*—Pertaining to the eye.

Optic Canal (Foramen)—The canal in the sphenoid bone for passage of the optic nerve.

Optic Chiasm—The crossing or decussation in the optic groove of the sphenoid bone, of the right and left optic nerves.

Optic Nerve—The II cranial nerve supplying the eyes; the nerve of sight.

Orabilex, *n.*—Proprietary drug (Bunamiodyl) for opacification of the gallbladder by the oral route.

Oral, *adj.*—Pertaining to the mouth.

Oral Cavity—Mouth

Oral Route—Taken by mouth; ingestion of food, fluids or medicaments. (cf. Parenteral.)

Orbit, *n.*—The path described by a body in its rotation about another due to gravitational pull; as the orbit of the earth and other planets revolving about the sun, or the orbit of electrons revolving about the nucleus of an atom; also the bony cavity containing the eye.

Orbital Electrons—Subatomic particles carrying negative charges which revolve in orbits around the nucleus of an atom.

Orchid (Orchis), *n.*—The testicle; the male gonad.

Orchidectomy, *n.*—Operative removal of a testicle.

Orchitis, *n.*—Inflammation of the testis.

Ordogram, *n.*—A body section roentgenogram made with an Ordograph.

Ordograph, *n.*—A proprietary name for an x-ray machine used for body section radiography.

Ordographic, *adj.*—Of or pertaining to an ordogram or ordograph.

Organ, *n.*—A collection of cells constituting a part of the body for exercising a specific function.

Organic Lesion—A pathological condition pertaining to a part of the body having a special function.

Orifice, *n.*—Opening, especially of a tube, as the orifice of the Eustachian tube.

Oropharynx, *n.*—That portion of the pharnyx extending from the level of the palate to the vestibule of the larynx.

Ortho—*prefix* indicating a normal degree of, as orthotonic.

Orthodiagram, *n.*—A penciled tracing made of the outline of an organ such as the heart using the technique of orthodiagraphy.

Orthodiagraphic, *adj.*—Mapping out of an organ in its natural size.

Orthodiagraphy, *n.*—An examination combining fluoroscopy with making of a diagram of a part in its actual size.

Orthopedic Appliance—A prosthetic device or brace.

[1] Ollier, L. X. E. P.: Enostoses multiples. *Med. C. R. Soc. Sci. med. Lyon, 29*:2, 12, 1890.

[2] Robbins, Laurence L.: The roentgenologic diagnosis of parasternal omental hernia. *Radiology, 41*:378–382, Oct., 1943.

O.S.—Oculus sinister, the left eye. (cf. O.D., the right eye.)

Os, *n.*—A Latin word meaning bone.

Os Acetabuli—The bony ossicle occasionally found along the margin of the acetabulum which never unites with the main body of the bone. (Also Os cotyledoni.)

Os Calcis (Calcaneus, BNA)—Heel bone.

Os Capitatum (BNA)—The capitate or os magnum, one of the distal row of carpal bones.

Oscillating Grid—A form of Bucky grid which constantly moves to and fro thus preventing grid lines on film. (Also reciprocating grid.)

Oscillograph (Oscilloscope) *n.*—An instrument which traces a curve representing the characteristic behavior of an electric current in respect to them.

-oscopy—*suffix* meaning visualizing; inspection of.

Os Coxae (BNA)—The innominate or hip bone.

Os Cuboideum (BNA)—The cuboid bone. One of the tarsal bones.

Os Cuneiforme Intermedium (BNA)—The 2nd cuneiform bone.

Os Cuneiforme Laterale (BNA)—The 3rd cuneiform bone.

Os Cuneiforme Mediale (BNA)—The 1st cuneiform bone.

Osgood-Schlatter's Disease—Osteochondritis of tibial tubercle. A disease of the epiphysis for the tubercle of the tibia which results in its separation from the shaft.

Os Hamatum (BNA)—The hamate bone, one of the distal row of carpal bones.

Os Intercuneiform—An inconstant variant of a sesamoid bone of the foot occurring adjacent to the 2nd cuneiform bone. This is a bony ossicle between the 1st and 2nd cuneiform bones lying on the dorsal surface of the foot.

Os Intermedium (Os lunatum, BNA)—The lunate bone, one of the proximal row of carpal bones.

Os Intermetatarseum—A supernumerary bone situated at the base of the first metatarsal or between it and the second metatarsal bone, and usually fused with one or the other or with the medial cuneiform bone.

-osis—*suffix* meaning increase, condition or disease. Examples: leukocytosis, tuberculosis.

Os Ischii (BNA)—The ischium, one of the bones of the pelvis.

Os Lunatum (BNA)—The lunate bone in proximal row of carpus.

Osmosis, *n.*—Diffusion of two miscible solutions through a semipermeable membrane separating them, and tending to equalize their concentrations.

Osmotic, *adj.*—Of or pertaining to osmosis.

Os Multangulum Majus (Os trapezium, BNA)—The greater multangular bone; one of distal row of carpal bones.

Os Multangulum Minor (Os trapezoideum, BNA)—The lesser multangular bone; one of the distal row of carpal bones.

Os Peroneum (Peroneal sesamoid)—A sesamoid bone sometimes found in the tendon of the peroneus muscle on the lateral aspect of the foot adjacent to the cuboid bone.

Os Pisiforme (BNA)—The pisiform or smallest of the carpal bones, in the proximal row.

Os Pretrapezium (Epitrapezium)—A bony ossicle occasionally occurring proximal to the trapezium or greater multangular bone of the carpus.

Os Scaphoideum (BNA)—The navicular bone of the carpus in the proximal row.

Osseous, *adj.*—Of or pertaining to bone.

Osseous Dyplasia—Abnormal bony development.

Osseous Dystrophy—Abnormal bony nutrition.

Osseous System—Bony skeleton.

Osseous Tissue—Bony tissue.

Ossicles, *pl. n.*—Congenital variants i.e. sesamoid bones occurring in tendons adjacent to bones.

Ossicles of the Ear—Three small bones in the middle ear, connected to the tympanic membrane which transmit vibrations in the air to the auditory apparatus; the malleus, incus, and stapes.

Ossification, *n.*—The formation of bone or of a bony substance. (cf. calcification.)

Ossifying, *adj.*—Forming bone.

Ossifying Fibroma—Probably a variant of monostotic fibrous dysplasia.

Osteitis Condensans ILII—Bony deposition along the margins of the sacroiliac joints.

Osteitis Deformans—(Paget's Disease) A chronic disease of the bones characterized especially by enlargement and thickening of the skull.

Osteitis Fibrosa Cystica—A disease of bone characterized by cystic changes and marked demineralization caused by an overproduction of parathormone from either an adenoma or from hyperplasia of the parathyroid glands.

Osteitis, Sclerosing—An area of bony condensation, usually in the frontal bone neighboring on the frontal sinus and indicative of chronic inflammatory frontal sinusitis.

Osteo—*prefix* meaning bone or bony.

Osteoarthritis, *n.*–One of the arthritides characterized principally by reactive changes in the joints with production of marginal spurs or osteophytes, bony sclerosis, thinning of the cartilage and cyst formations. (More specific

terms are hypertrophic arthritis, degenerative arthritis and traumatic arthritis.)

Osteoarthropathy, *n.*[1]—Disease of the bones and joints such as traumatic, static, and senescent varieties.

Osteoarthropathy, Hypertrophic Pulmonary—This is characterized by symmetrical thickening of short and long tubular bones with subperiosteal new bone formation. It is associated with chronic pulmonary and cardiac ailments. Usually the ends of the fingers become clubbed.

Osteoblastic, *adj.*—Bone forming.

Osteochondritis, *n.*—An aseptic necrotic process of bone and cartilage at their points of attachment or centers of growth, of unknown cause. (Also osteochondrosis.)

Osteochondritis Deformans Metatarso—Juvenilis—Irregular enlargement of the head of the second or third metatarsal bones which become thickened and the joint space irregularly narrowed. (See also Freiberg's infraction or disease.)

Osteochondritis Dissecans (König)—A disease of bone involving the articular-cortex, especially of the medial condyle of the knee, with separation of a fragment or button of bone.

Osteochondritis Dorsalis Juvenilis—Calve's Disease which affects the primary centers of ossification of the vertebrae.

Osteochondritis of Femoral Head (Legg-Perthes Disease)—Caused by aseptic necrosis of the capital epiphysis.

Osteochondritis of Lunate (Kienbock)—Degenerative changes, probably due to aseptic necrosis, of the carpal lunate bone.

Osteochondritis of Medial Tibial Condyle—Blount's Disease.

Osteochondritis of Os Calcis—Disease of the developing apophysis of the calcaneus or Sever's disease.

Osteochondritis of Secondary Center Patella—This form of osteochondritis is known as Sinding-Larsen's Disease.

Osteochondritis of Tarsal Scaphoid—Köhler's disease.

Osteochondritis of Tibial Tuberosity—Osgood-Schlatter's Disease.

Osteochondritis of the Vertebral Epiphyses—Scheuermann's Disease affecting the secondary centers of ossification of the vertebrae.

Osteochondrodystrophy, *n.*—(Morquio's Disease.) A familial osseous dystrophy manifested by permanent deformity of all the bones and large joints and characterized by depressed nose, enlarged sella turcica, dorsal kyphosis, elevated clavicles, barrel chest, genu valgum, and flat feet. (Chondro-osteodystrophy.)

[1] De Lorimier, Alfred A.: *The Arthropathies*, Chicago, The Year Book Publishers, 1943.

Osteochondroma, *pl.-ta.*, *n.*—A benign bone tumor, made up of osseous and cartilaginous elements, which give a picture similar to osteoma except that they are larger and show more of the larger areas of rarefaction within the dense mass of bone.

Osteochondromatosis, *n.*—Generalized or multiple osteochondromata; there is extensive production of new bone in joints and along tendons, the appearance suggesting a sort of joint tumor, with lobulated bone production.

Osteochondrosarcoma, *n.*—A malignant tumor containing both osseous and cartilaginous elements.

Osteochondrosis, *n.*—Same as osteochondritis.

Osteoclastic, *adj.*—Bone-destroying.

Osteoclastoma, *n.*—A giant cell tumor of bone seen most often in adults over twenty years of age and frequently following trauma. The lesion is characterized by a thin shell of bone overlying an expanding lesion giving radiographically a "basket waeve" or "soap bubble" appearance.

Osteofibroma, *n.*—A benign tumor composed of both osseous and fibrous tissue elements.

Osteogenesis, *n.*—The process of bone development.

Osteogenesis Imperfecta—Imperfect formation of bone during bodily development.

Osteogenic, *adj.*—Bone forming.

Osteogenic Sarcoma—A malignant tumor arising from bone.

Osteoid Fibroma—A fibrous tissue tumor having some bone-like elements.

Osteoid Osteoma[2]—A benign painful bone lesion showing a halo of lesser density around a central nidus of greater density.

Osteolysis—Softening and destruction of bone.

Osteolytic, *adj.*—Of or pertaining to bone softening, or destruction e.g., by a metastasis from breast or thyroid carcinoma.

Osteolytic Metastases—Secondary malignant tumor transplants causing areas of osteolysis or destruction in bones. The most common neoplasms causing such changes are those of the breast, thyroid, kidney and lung. Prostate carcinoma may occasionally produce osteolytic metastases. (cf. Osteosclerotic tumor metastases.)

Osteoma, *n.*—A benign bone tumor.

Osteomalacia, *n.*—Wasting disease of bone, characterized by widening of the Haversian systems and softening and bending of bones. Also an adult form of hypovitaminosis D with loss of calcium.

[2] Jaffe, Henry L.: Osteoid-osteoma of bone. *Radiology*, *45*:319, 1945.

Osteomalacic, *adj.*—Of or pertaining to wasting and softening disease of bone.

Osteomatoses (Epiarticular Osteochondromas)—These small tumors originate on joint surface and may become broken off at their bases and become free joint bodies or mice.

Osteomyelitis, *n.*—Infection involving the medullary portion of a bone.

Osteo-Onycho Dysplasia (Turner's Syndrome)[1]—This is a syndrome characterized by: 1) Dystrophy of fingernails, 2) hypoplastic or rudimentary patellae, 3) prominent medial femoral condyles, 4) iliac horns, which are symmetrical, 5) hypoplastic radial heads, subluxated or dislocated posteriorly and, 6) the condition is hereditary.

Osteopetrosis, *n.*—Marble bones. (Albers-Schonberg disease.)

Osteophyte, *pl. -es,*—A bony excrescence or outgrowth, usually branched in shape; a bony spur on the articular margins.

Osteopoikilosis, *n.*—A congenital disease of bone characterized by dense lens-shaped areas of bony condensation throughout the skeleton, except the skull, spine, scapula, clavicle and patella.

Osteoporosis, *n.*—Increased porosity of bone, softening of bone, widening of Haversian canals and absorption of calcareous matter; diminished density of bone usually caused by lack of calcium salts, rendering it more permeable to x ray, hence increased radiability.

Osteoporosis Circumscripta—A form of early osteitis deformans (Paget's disease) of the skull where there is a confluent map-like resorption of bone. (See also geographic skull.)

Osteoporosis of Disuse (Atrophy of Disuse)—Increased radiability of bone secondary to disuse and/or immobilization. (cf. Sudeck's Atrophy.)

Osteoradionecrosis, *n.*—Necrosis of bone due to application of a large amount of radiation.

Osteosclerosis, *n.*—Increased bone density or radio-opacity. This may be due to increased calcium deposition within the bone as in osteopetrosis or may be due to increased bone formation in the periosteum on the external portion of the bony cortex, or endosteal, causing narrowing of the marrow cavity or thickening of the compact bone itself.

Osteosclerotic Tumor Metastases—The most common osteoblastic tumor metastases are those from primary carcinoma of the prostate characterized by varying-sized areas of increased density. Other tumors which may produce sclerotic changes in bone are those of the stomach, thyroid, kidney, lung, and occasionally breast. (cf. osteolytic metastases.)

[1] Turner, Henry: A syndrome of infantilism, congenital webbed neck and cubitus valgus. *Endocrinology, 23*:566–574, 1938.

Os Tibiale Externum—A small anomalous or sesamoid bone situated in the angle between the tarsal navicular bone and the head of the talus.

Ostium, *pl. a-* —A mouth or orifice, especially of a hollow organ or canal as of the Fallopian tube into the abdomen.

Ostium Abdominale—The opening of the Fallopian tube into the peritoneal cavity.

-ostomy—*suffix* meaning making a more-or-less permanent opening.

Os Trigonum—An ossicle or sesamoid bone in the tarsus seen on roentgenograms just posterior to the talus.

Os Triquetrum (BNA)—The triquetral or cuneiform bone; one of the proximal row of carpal bones.

Os Trochlearis—An ossification center for the epiphysis of the trochlea of the humerus.

Os Uteri—The mouth of the uterus or womb.

Os Vesalianum—A triangular bony ossicle lying adjacent to the proximal head of the fifth metatarsal bone.

OT—Old tuberculin. A preparation used for skin-testing for tuberculosis. (See also PPD.)

Otitis Media—Inflammation of the middle ear.

-otomy—*suffix* meaning cutting or incision into.

Otto Pelvis (Arthrokatadysis)—A form of osteochondritis with protrusion of the acetabulae into the pelvis. (Protrusio acetabuli.)

Outer Canthus—The lateral commissure of the eyelid and the anterior point of the canthomeatal line. (cf. Reid's base line in skull roentgenography.)

Outflow Tract of the Heart—Radiographically, the shadows of the pulmonary conus and arterial segments.

Outlet, *n.*—The lower pelvic strait or opening for passage of the fetus.

Outlet Contraction—Less than normal average measurement of the lower pelvic strait indicating probable dystocia.

Output, *n.*—The value in r/min. of radiation from an x-ray tube.

Ovale, *adj.*,—Like or concerning an ovum, the reproductive cell of the female, and shaped like an egg.

Ovale, Foramen—An oval-shaped foramen in the base of the skull giving passage to mandibular branch (third division) of the trigeminal nerve. Also an opening in the fetal heart between the two auricles.

Ovarian, *adj.*—Of or referring to the ovary.

Ovary, *pl. -ies, n.*—The female gonad containing the Graffian follicles in which the ova are developed.

Overdevelopment, *n.*—Retention of a film in developing solution beyond the time of normal development.

Overexposure, *n.*—Too great an exposure of an x-ray film to x rays. Usually increased time of exposure or excessive milliampere seconds.

Overloading, *v.*—Exceeding the rated capacity of an x-ray tube by imposition of too much kilovoltage, milliamperage and time.

Overpenetration, *n.*—Too great penetration (kilovoltage) used in radiography, thus producing a radiograph that is too dense and lacking in contrast.

Oviduct, *n.*—The fallopian tube which extends between a cornua of the uterus and an ovary.

Ovum, *n.*—The female gamete or egg.

Owen Position[1]—A variation of the Mayer position for x-ray examination of the temporal bone, especially to delineate the tympanic cavity, attic, antrum and aditus.

Ox Gall Enema—An enema containing a small amount of ox gall used to promote expulsion of gas from the colon.

Oxycephaly, *n.*—An abnormally high or tower skull. (Turricephaly)

[1]Owen, G. R.: The key area (Attic-aditus-antrum) in the chronic mastoid. *Tr. Am. Otol., Soc.*, 1951, p. 169. *idem.*: Simplified method of producing axial view of mayer in chronic mastoiditis and attic cholesteatoma. *Am. Jour. Roentgenol. & Rad. Therapy*, 1947, 57, 260–263.

P

PA—The posterior anterior projection of the x rays, that is from back to front of the part with respect to the x-ray tube. Opposite of AP projection.

Pacchionian Depressions—Small, irregular pits produced on inner surface of the skull by protuberance of rounded growths of fibrous tissue and blood vessels along the longitudinal fissure of the cerebrum and growing on the arachnoid membrane. (Arachnoidal granulations.)

Pacchionian Granulations (Arachnoidal Granulations)—The tufts of blood vessels extending outward from the arachnoid covering of the brain and making small pits on the inner table of the skull.

Pachymeningitis, *n.*—A form of meningitis in which the dura mater become markedly thickened.

Packing Fraction—Essentially the same as Binding Energy i.e. the energy equivalent to the difference between the weight of the nucleus as it exists and the sum of the weights of the particles it comprises.

"Pad Sign" of Case.[1,2]—The "pad sign" refers to a circumscribed filling defect in the gastric silhouette seen in the horizontal position, which nearly or completely disappears when the patient stands before the vertical roentgenoscope, but which is reproduced in the vertical position by having the patient press his abdomen hard against the screen, or by making slight pressure with the examining fingers. This sign may be present, however, in cases of carcinoma of the posterior gastric wall, and also with certain pedunculated tumors of the stomach.

"Pad Symptom or Sign."[3]—The so-called pad, or meniscus, sign (symptom) associated with controlled compression, is of great significance. In eliciting this sign an attempt is made, either by a compression apparatus or by the palpating hand or by a compression tube, to render the layer of the overlying contrast agent so thin by lateral displacement, especially when the process is situated on the posterior or anterior wall of an organ, that a tumor should appear as a rounded evagination or defect.

Paget's Disease—A chronic disease of bone characterized especially by enlargement and thickening of the skull. (Osteitis deformans.) Also an eczematous disease of the nipple which may be pre-cancerous.

Pair Production—This occurs during the interaction of radiation and matter when the incident photon is annihilated in the vicinity of the nucleus of the absorbing atom, with subsequent production of an electron and positron pair.

Palatal, *adj.*—Pertaining to the palate. (Roof of the mouth.)

Palatal Foramen—Situated on the alveolar ridge posterior to the third molar tooth and opening into the pterygo-palatine canal and fossa through which the maxillary nerve can be reached for injection.

Palate, *n.*—The hard and soft palate forming the roof of the mouth.

Palate Bone—The bone forming the hard palate.

Palatine, *adj.*—Of or pertaining to the palate, as the palatine tonsils situated just posterior to the soft palate.

Palindromic Rheumatism, Acute—This is a recurring form of an apparent variant of rheumatic fever which is not marked by any roentgenographic signs and which usually affects a single joint in individuals in the fourth decade of life.

Palliative Irradiation—Administered to reduce pain and suffering as well as anxiety without hope of permanent cure.[4]

Palmar, *adj.*—Referring to the palm of the hand.

Palmar Surface—The palm of the hand.

Palpebral Fissure—The cleft between the eyelids.

Palsy, *n.*—Paralysis.

Panchromatic, *adj.*—Sensitive to all colors of the light spectrum.

Pancoast's Syndrome—Pain in apical portion of chest and neck associated with paralysis of cervical sympathetic nerves manifested by ptosis and miosis of the eye on the affected side as well as anhydrosis of the skin.

Pancoast's Tumor[5]—Named for the famous radiologist, Henry P. Pancoast, of Philadelphia who described the superior sulcus tumor, now known to be a type of bronchiogenic carcinoma.

Pancreas, *n.*—A glandular organ located posterior to the stomach, the internal secretion from which (insulin) aids in metabolism of carbohydrates.

[1] Case, James T.: Roentgenology of pancreatic disease, Caldwell Lecture. *Am. Jour. Roentgenol. & Rad. Ther., 44*:485, 1940.

[2] Case, J. T.: Fifty years of roentgen rays in gastroenterology. *Am. Jour. Roentgenol. & Rad. Ther., 54*:607, 1945.

[3] Schinz, Baensch, et al.: English edition arranged by Dr. James T. Case. *Roentgendiagnostics*, Page 3113, Figure 3777.

[4] Grigg, E. R. N.: Etymologic and other aspects of palliation, *Am. J. Roentgenol., Rad. Ther. & Nuc. Med., 80*:5, pp. 863–866, 1958.

[5] Pancoast, Henry K.: Importance of careful roentgen-ray investigation of apical chest tumors, *Am. J. Roentgenol. & Rad. Ther., XIII*:95, 1925.

Pancreatic, *adj.*—Of or pertaining to the pancreas.

Pancreatic Fibrosis—Cystic fibrosis of the pancreas. A disease of infants and children, affecting also the lungs and intestinal tract. (cf. Mucoviscidosis.)

Pancreatitis, *n.*—Inflammation of the pancreas which may be either acute or chronic.

Panner's Disease—Familial inequality of the length of the metatarsal bones. Also, osteochondritis of the distal head of the second metatarsal bone, more commonly known as Freiberg's Infraction or Koehler's Disease of the second metatarsal head.

Pannus, *n.*—A form of granulation tissue developing from the vascular synovial membrane of a joint and growing over the joint cartilage. This leads to thinning of the joint cartilage and development of the subchondral cysts characteristic of tuberculous and rheumatoid arthritis.

Pansinusitis, *n.*—Inflammation of all the paranasal sinuses.

Pantopaque, *n.*—Proprietary name for a radiopaque substance used for myelograms.

Papanicolaou Smear[1] **(Pap Smear)**—A specimen of secretion from uterine cervix, vagina, bronchus, bladder or stomach for cytologic examination.

Papillary Filling Defects—These are papillomatous outpouchings of the wall of the gallbladder seen after opacification with opaque medium.

Papillitis, *n.*—Inflammation of the optic disc with edema; inflammation of the renal papillae.

Papilloma, *n.*—A small circumscribed rounded tumor of a cutaneous or mucous surface, such as warts, condylomata, and various polypi.

Para—*prefix* meaning running alongside; adjacent to; by, around, near or beyond.

Paracentesis, *n.*—Insertion of a hollow needle into a cavity for the purpose of withdrawal of fluid.

Paracolic, *adj.*—Adjacent to or alongside of the colon.

Paradoxical, *adj.*—Seemingly inconsistent with the facts; such as paradoxical movement of the diaphragm, going up when it should go down and vice versa.

Paraduodenal, *adj.*—Adjacent to or alongside of the duodenum.

Paraesophageal, *adj.*—Adjacent to or alongside of the esophagus. (cf. periesophageal.)

Paraganglioma, *n.*—A tumor of the chromaffin cells of the adrenal glands; a pheochromocytoma.

[1] Papanicolaou, G. N. and Traut, H. F.: The diagnostic value of vaginal smears in carcinoma of the uterus. *Amer. J. Obstet. & Gyn.*, *42*:193–206, 1941.

Parallax, *n.*—Method for the localization of a foreign body based upon the principle of relative change in relationship of a foreign body with respect to an object of known depth, by displacement of the source of x rays.

Paralysis, *n.*—Loss of nerve control of a muscle or muscle group.

Paralytic, *adj.*—Of or pertaining to paralysis.

Paralytic Ileus—Obstruction to the normal flow of intestinal material due to paralysis of the muscular coat of the bowel. Also adynamic ileus.

Paranasal Sinuses—The accessory nasal sinuses.

Paraphysis, *n.*—A portion of the roof plate of the telencephalon.

Paraplegic, *adj.*—Of or pertaining to paraplegia or paralysis of both lower extremities.

Pararenal, *adj.*—Alongside of or next to the kidney.

Parasagittal—Alongside the sagittal suture or superior sagittal sinus.

Parasellar, *adj.*—Adjacent to or alongside of the sella turcica.

Parasellar Lesion—A tumor or calcified blood vessel situated alongside the sella.

Parasite, *n.*—An organism which lives on another known as the host.

Parasternal, *adj.*—Beside or adjacent to the sternum.

Parasternal Hernia—A form of hernia presenting at the side adjacent to the lower end of the sternum.

Parasympathectomy—Cutting of the parasympathetic nerves.

Parasympathetic, *n.*—One of the divisions of the autonomic nervous system controlling involuntary actions of the body. The sympathetic nervous system is connected with it and forms the other division of the autonomic nervous system.

Parathyroid Glands—A number of pea-sized glands adjacent to the thyroid gland. They have to do with calcium metabolism.

Parathyroid Hormone—Parathormone or extract of the internal secretion of the parathyroid glands.

Paratracheal—Parallel with the trachea; alongside the trachea.

Parenchyma, *n.*—The outer functioning portion of the lungs containing the air sacs; the cells or distinguishing specific tissue of an organ supported by its connective tissue stroma.

Parenchymal, *adj.*—Pertaining to the parenchyma, as of the lungs.

Parenchymatous, *adj.*—Pertaining to the parenchyma, as of the kidney.

Parenteral, *n.*—Administration of a medicament by any means other than by the alimentary

canal, as by intravenous injection or subcutaneously. (cf. oral route.)

Parenterally, *adj.*—Of or pertaining to parenteral.

Parietal, *adj.*—At the outer edge or wall in contradistinction to visceral; as, the parietal pleura lines the chest cavity, the visceral pleura covers the lungs.

Parietal Bone—A large flat bone forming the side or wall of the cranium.

Parietal Foramina—Inconstant, paired foramina found on either side of the sagittal suture in the midportion of the parietal bone and represent foramina for emissary veins. These may be very large and persist as large holes in the skull. (See also Foramina Parietalia Permagna and Persistent Parietal Foramina.)

Parietal Pleura—Pleura covering the inside or wall of the thoracic cavity. (cf. Visceral pleura.)

Parosteal Bone Tumors—Ones which originate from tissues adjoining bone such as joints, fibrous tissues, nerves and meninges. They include such tumors as parosteal chondroma, parosteal osteoma, glomus tumors, fibrosarcoma, neurosarcoma, meningioma and synovioma. (cf. Periosteal.)

Parotid Gland—One of the salivary glands situated in the soft tissues in the preauricular area, emptying its secretion into the mouth via Stenson's Duct.

Parotitis, *n.*—Inflammation of the parotid gland. Epidemic form is termed mumps.

Parovarian, *adj.*—Alongside or near the ovary, and or pertaining to the adnexa.

Parovarium, *n.*—The organ of Rosenmüller; the remains of the proximal portion of the Wolffian body.

Parrot's Nodes—These are nodular condensations seen in syphilis of the bones of the skull.

Pars Interarticularis—The isthmus of a vertebra; connecting the inferior and superior articulating processes.

Pars Intermedia—The pituitary body; the epithelial body of dual origin located at the base of the brain in the sella turcica.

Pars Media of the Stomach—The midportion.

Parspeed Intensifying Screens—Made with intermediate size crystals requiring an exposure between one for high speed and one for high definition screens, to produce satisfactory radiographs.

Pars Petrosa—The petrous or hard portion of the temporal bone.

Partial Obstruction—Incomplete intestinal obstruction; incomplete obstruction of a bronchus causing localized emphysema.

Particle Accelerator—An apparatus, such as a cyclotron, for accelerating charged particles.

Part-Thickness—A measurement usually made with a metal caliper for determining kilovoltage settings relative to centimeter thickness of a part being examined.

Pass Box—A two-way, light-tight tunnel for passing exposed and unexposed films in cassettes between the dark room and exposure rooms.

Passive Hyperemia of the Lungs—Pulmonary passive congestion secondary to heart failure and manifested by engorgement of the vascular trunks extending throughout the lungs with increased caliber at the hila.

Passive Pulmonary Congestion—Stagnation of blood in the lungs from a failing heart. Radiographically, there may be patchy areas of edema marked by coalescence of lung markings with evidence of transudation. This may be either unilateral or bilateral.

Patella, *n.*—The knee cap.

Patent, *adj.*—Open, as patent foramen ovale in the heart; also, patent ductus arteriosus.

Patent Ductus Arteriosus (Ductus Botalli)—Congenital heart disease with persistence of vessel between the right side of the heart and the aorta, bypassing the pulmonary circulation. Radiographically, there is marked enlargement of the pulmonary arch causing great dilatation of the conus pulmonalis beyond that of mitral stenosis with some enlargement of the right heart.

Patent Foramen Ovale—An opening in the interauricular septum representing a congenital defect.

Patent Urachus—An opening onto the abdomen of a portion of the allantoic sac of the fetus which may persist in post-natal life.

Paterson's Nodules—The small rounded elevations on the skin in molluscum contagiosum, a skin disease characterized by small pearly, warty elevations on the skin.

Pathogenic, *n.*—Capable of producing disease.

Pathognomonic, *n.*—Indicative of a disease, especially of one or more of its characteristic symptoms.

Pathologic, Pathological, *adj.*—Of or pertaining to the science of pathology; abnormal as compared with normal physiological processes.

Pathology, *n.*—The science which deals with diseased structures of the body.

-pathy—*suffix* meaning disease process.

Peak Kilovoltage (KVP)—The highest kilovoltage attained at any time in any electrical cycle. (Peak Value, Peak Voltage.)

Pectoral, *adj.*—Concerning the chest.

Pectoral Muscles—The large muscles located in the anterior portion of the chest.

Pectus Carinatum—Pigeon breast. Forward projection of the sternum like keel of a boat.

Pectus Excavatum—Congenital depression in the lower portion of the sternum, breast or thorax. Funnel breast.

Pedicle (Peduncle), *pl. -es, n.*—A slender stem, as the attachment of a tumor; the bony process projecting backward from the body of a vertebra which connects with the lamina on either side.

Pedicle Erosion—A thinning, demineralization or disappearance of a pedicle from pressure of a tumor, frequently a neurogenic tumor of the spinal canal, and visible on plain AP roentgenograms of the thoracic or lumbar vertebrae.

Pediculate, *adj.*—Of or pertaining to a pedicle.

Pedunculated, *adj.*—Of or pertaining to a stalk or peduncle.

Pelken's Spur or Sign—A small bony spur seen in hypovitaminosis D immediately adjoining the white line of Fraenkel.

Pellagra, *n.*—A vitamin B deficiency disease seen principally in the South.

Pelligrini-Stieda's Disease—Calcification of the medial collateral ligament of the knee.

Pellucid, *adj.*—Translucent, as in the septum pellucidum.

Pellucid Septum—The septum pellucidum, a translucent membrane separating the bodies of the lateral ventricles anteriorly.

Pelvic, *adj.*—Of or pertaining to the pelvis.

Pelvic Organs—The organs contained in the pelvis.

Pelvicephalometer, *n.*—An instrument for measurement of the fetal head and outlet of the mother's pelvis to determine relative size. (cf. Pelvimeter.)

Pelviectasis, *n.*—Dilatation of renal pelvis.

Pelvimeter—An instrument for measuring the bony pelvis.

Pelvimetry, X-Ray, *n.*—Roentgenographic measurement of size of the bony pelvis.

Pelvis, *pl. -es, n.*—The bony ring formed by the innominate bones on either side and the sacrum behind, which serves as support for the pelvic and abdominal structures. The funnel-shaped portion of the kidney.

Pelvis (Renal), *n.*—The funnel-shaped structure which collects the urine from the calyces of the kidney and conveys it to the ureter.

Pendulum Therapy Unit—A special design of radiation therapy unit for providing moving field therapy along the radii of a swinging pendulum.

Penetration, *n.*—The ability of radiation to extend down into and go through substances; as, the penetration of x rays. The voltage factor in radiography.

Penetrometer—An aluminum step wedge or ladder exposed over a film to determine the quality or penetrating ability of a given x-ray beam.

-penia—*suffix* meaning decrease, deficiency, lack of.

Penumbra, *n.*—Partial shadow about the umbra or true shadow of an object whether produced by light or x rays. In radiography, it is determined by the size of the focal spot, the focus-film distance and the object-film distance.

Peptic Ulcer—An ulcerative lesion of the mucous membrane of the esophagus, stomach or duodenum.

Percentage Depth Dose—That quantity of radiation delivered at a certain depth in tissue expressed either as a percentage of the amount delivered on the skin or in the air.

Percutaneous, *adj.*—Injection of a medicament or performance of a procedure through the skin. (cf. Parenteral.)

Percutaneous Splenoportography—Injection of opaque medium such as Diodrast into the spleen followed by rapid serial roentgenography for a demonstration of bleeding esophageal varices.

Perforating, *adj.*—Breaking through or pierced.

Perforation, *n.*—Piercing or the breaking through as of an ulcer crater into the peritoneal cavity.

Peri—*Prefix* meaning around; as, periosteum, around the bone.

Periantral, *adj.*—Surrounding a cavity or chamber, particularly the maxillary antrum or sinus. Also around the mastoid antrum.

Periantral Sclerosis—Spoken of increased density of cells surrounding the mastoid antrum.

Periapical, *adj.*—Around the apex of the root of a tooth.

Periarteritis, *n.*—A disease marked by inflammatory changes in the walls of the blood vessels as in periarteritis nodosa.

Periarteritis Nodosa—One of the collagen diseases characterized by multiple areas of circumscribed inflammation of the adventitia of an artery resulting in the formation of nodules.

Periarticular, *adj.*—Surrounding a joint.

Peribronchial, *adj.*—Pertaining to the area around a bronchus or bronchi.

Peribronchial Markings—The linear markings seen in a film of the lungs due to branching of the bronchi and their accompanying peribronchial structures.

Peribronchiolar, *adj.*—The area around a bronchiole or bronchioles.

Peribronchiolitis—Inflammation of an area around a bronchiole or bronchioles.

Pericardial, *adj.*—Of or pertaining to the pericardium.

Pericardial Cyst—This is also termed a celomic

cyst or a pericardial diverticulum or cyst. Radiographically, it is seen in the right cardiophrenic angle anteriorly and intimately connected with the pericardium.[1]

Pericardial Fat Pad—A collection of fat in or about the pericardium; commonly formed at the apex of the heart and in the right cardiophrenic angle. (Also epipericardial fat pad.)

Pericardial Fluid—A collection of fluid within the pericardial sac.

Pericarditis, *n.*—Inflammation of the pericardial sac.

Pericarditis, Chronic Adhesive (Pick's Disease)—A form of inflammatory change in the pericardium producing constriction of the heart.

Pericardium, *n.*—The membrane covering the heart and proximal portions of the great vessels and lining of the pericardial cavity.

Pericementitis, *n.*—Inflammation of the periodontal membrane.

Pericholecystic Disease—Inflammatory disease such as adhesions surrounding the gallbladder and its ducts.

Peridental, *adj.*—A membrane surrounding a tooth.

Peridental Bone Resorption—Areas of bone loss surrounding teeth usually produced by periapical abscesses and granulomata, dentigerous cysts, periodontal cysts and periodontoclasia.

Peridiverticulitis, *n.*—Inflammatory changes around a diverticulum.

Periesophageal, *adj.*—Situated around the esophagus. (cf. Paraesophageal.)

Perigastric, *adj.*—Around the stomach.

Perinephritic, *adj.*—Around the kidney.

Perinephritic Abscess—An abscess around or about the kidney.

Perineum, *n.*—The region between the upper portion of the thighs extending from the pubic arch to the coccyx.

Perineural, *adj.*—Relating to the sheath around a nerve.

Periodic Table—A systematic arrangement, devised by Mendelyeev, a Russian Chemist, of the chemical elements in order of their atomic numbers with groupings of the elements in terms of their similarities in properties.

Periodontal, *adj.*—Around a tooth; refers to the dental root, root end or dentoperiosteal tissues.

Periodontal Abscess—An infection causing bone resorption in the immediate vicinity of a tooth.

Periodontal Cyst—Epithelial-lined closed sacs formed in the periodontal membrane and adjacent structures, usually situated at the apex of a tooth, but sometimes along its lateral surface.

Periodontitis, *n.*—Alveolar periostitis or inflammation of the periodontium.

Periodontium, *n.*—The supporting tissues surrounding and investing a tooth, that is, the periodontal membrane, the gingiva and the bone of the alveolus.

Periodontoclasia—Resorption of the alveolar margins of a tooth with progressive exposure of the cementum.

Periodontosis, *n.*—A degenerative disturbance around a tooth or the periodontium.

Periosteal—Pertaining to the periosteum. (cf. Parosteal.)

Periosteal Fibrosarcoma—A malignant tumor arising from the outer sheath of bone periosteum or the nearby fibrous tissue.

Periosteal Proliferation—Bone formation in the periosteum or beneath it which may be caused by trauma, toxic agents like phosphorus, chronic pulmonary and cardiac ailments, chronic inflammatory changes as in syphilis, subperiosteal hemorrhage or tumor. When sharply localized, bone spicules are formed which are termed osteophytes, or larger ones, exostoses.

Periosteum, *n.*—The fibrous covering of bone.

Periostitis, *n.*—Inflammation of the covering of a bone.

Peripheral, *adj.*—Of or pertaining to the periphery or outside.

Peripheral Porencephalic Cyst—Dilatations of the subarachnoid pathways resembling leptomeningeal cysts, usually on the convex surfaces of the brain.

Periphery, *n.*—The outside surface, or around the circumference of a part of the body.

Perirenal, *adj.*—Around the kidney.

Perirenal Insufflation—Visualization of the kidney by air insufflation.

Perisinus Abscess, *n.*—A localized collection of pus around a venous sinus of the skull.

Peristalsis, *n.*—A wave-like contraction of the gastrointestinal tract or ureters by which the contents are moved forward.

Peristaltic, *adj.*—Pertaining to the worm-like movement of the alimentary canal or ureters.

Peritendonitis, *n.*—Inflammation of the sheath of a tendon.

Peritendonitis Calcarea—Calcification in or around a tendon sheath.

Peritoneal, *adj.*—Of or pertaining to the peritoneum.

Peritoneum, *n.*—The serous membrane which lines the abdominal wall.

Peritonitis, *n.*—Inflammation of the peritoneum.

[1] Loehr, W. H.: Pericardial cysts. *Am. J. Roentgenol., Rad. Ther. & Nuc. Med.*, *68*:584–609, Oct., 1952.

Perityphlitis, *n.*—Inflammation or perienteritis around the cecum.

Periurethral, *adj.*—Around the urethra.

Perivesical, *adj.*—Around or about the urinary bladder.

Permanent Magnet—A piece of iron which retains its magnetism and does not depend for its magnetic properties on the flow of an electric current.

Permeable, *n.*—A substance affording penetration or passage, as of x rays.

Permissible Dose—That amount of radiation which it is considered may be received by an individual (occupational) in a certain period of time without harmful results ensuing. Latest recommendation (1956) by the International Commission on Radiation Units, was recommended as no more than 0.1r (100mr) measured in air, per week.[1]

Pernicious, *adj.*—Malignant, severe.

Pernicious Anemia—Referred to as PA or primary anemia.

Perodactylia, *n.*—A congenital or hereditary disease in which the fingers appear to have been amputated.

Peromelia—A congenital deformity with shortening, malformation or complete lack of a part or extremity, the arm being most frequently involved.

Perthes Disease[2]—A bone disease affecting the capital epiphysis of the head of the femur. (See also Legg-Perthes Disease.)

Pessary, *n.*—A device inserted into the vagina to support the uterus.

Petechia, *pl.* **-ae.,** *n.*—Minute hemorrhages from bleeding capillaries which may be seen as tiny spots in the skin.

Petit Mal—A mild form of epilepsy. (cf. Grand mal.)

Petroclinoid, *adj.*—Ligaments which may be calcified extending from the posterior clinoid processes to the petrous apices.

Petrosa, Pars—That part of the temporal bone which is exceptionally hard, dense and containing the internal auditory organs.

Petrositis, *n.*—Inflammation of the petrous pyramid.

Petrous, *adj.*—Hard or stony as the petrous portion of the temporal bone. (Pars Petrosa.)

Petrous Apex—The tip of the petrous pyramid through which passes the internal carotid artery in the carotid canal at the foramen lacerum.

Petrous Bone—The dense pyramidal process of the temporal bone which houses the auditory and carotid canals as well as the internal ear.

Petrous Pyramid—Bony prominence which is part of the temporal bone; the petrous or (stony) portion.

Petrous Ridges—Sharp margins of the superior portions of the petrous processes of the temporal bones.

-pexy—*suffix* meaning fixation or suspension.

Peyer's Patches—Agglomerations of lymphoid tissue occurring in the ileum.

Peyronie's Disease—Plastic induration of the penis which is of unknown cause. There may be microscopic hemorrhages in Buck's fascia with later deposition of lime salts.

PF (*abbrev.*)—A photofluorogram or survey film, usually of the chest made by means of a photofluorographic process. (See also, PR.)

Pfeiffer Board[1]—A specially designed angle board and tunnels for accurate and symmetrical roentgenography of the optic canals.

PF Film—A survey film, usually of the chest, made by a photofluorographic machine. (See also, PR film.)

Phacoma, *n.*—A tumor of the crystalline lens of the eye.

Phagocyte, *n.*—A white blood cell which possesses the property of ingesting bacteria, foreign particles and other cells.

Phalanges, *n.*—The smallest bones of the fingers and toes.

Phalanx—Any one of the smallest bones of the fingers and toes. A set of plates in rows composing the lamina reticularis of the brain.

Phantom, *n.*—A mannikin or another volume of material designed to simulate the absorption characteristics of the human body with respect to ionizing radiations, so that accurate measurements may be made without exposing a living subject. Commonly used materials in phantoms are Masonite, Presdwood and wax.

Pharyngoesophageal, *adj.*—Pertaining to the junction of the pharynx and esophagus.

Pharynx, *n.*—The portion of the throat connecting the mouth to the esophagus.

Phase, *n.*—The period of progress of an electrical vibration of an electric current cycle.

Phenolsulphonphthalein, *n.*—A drug used for testing the function of the kidneys. The percentage of the drug excreted by the kidneys is determined, after intravenous injection, at specified time intervals.

Pheochromocytoma, *n.*—A tumor of the adrenal gland causing marked elevation of the blood pressure. (See paraganglioma and chromaffin bodies.)

[1] Same recommendation continued by the I.C.R.U. at the IX International Congress of Radiology, Munich, Germany, July 1959.

[2] Perthes, G.: Uber Osteoehondritis deformans juvenilis. *Arch. f. Klin. Chir.*, *101*:779–807, 1913.

[1] Pfeiffer, Raymond L.: A new technique for roentgenography of the optic canals, *Am. J. Roentgenol & Rad. Ther.*, *29*:3, 410–415, March, 1933.

Philtrum, *n.*—The groove in the midportion of the upper lip.

Phlebolith, *pl.* *-s*, *n.*—A venous concretion, caused by calcification of a thrombus; small rounded calcium deposits in the walls of veins.

Phlegmonous, *adj.*—Inflammation of subcutaneous and connective tissues; cellulitis.

Phosphatase, *n.*—Acid and alkaline constituents of the blood which are increased in certain diseases.

Phosphorescence, *n.*—Ability of a substance to emit light without sensible heat or luminescence caused by exposure to light or other forms of radiation, and lasting after exposure has ceased.

Phosphorus Poisoning—Poisoning from absorption of this heavy metal producing lines in the bones similar to those of lead or bismuth.

Phosphorus, Radioactive (Radiophosphorus, P^{32})—A radioisotope emitting beta particles only and used in tumor localization and for treatment of blood dyscrasias.

Photoelectric, *adj.*—A substance having the quality of undergoing a change in electrical resistance when subjected to radiation or visible light.

Photoelectric Cell—An electronic tube which contains an element made of a material which undergoes a change in electrical resistance when exposed to visible light thus acting as a control device in the phototiming circuit of a modern x-ray machine.

Photoelectric Collision—In the interaction of radiation and matter, a collision between a photon and an orbital electron of an atom, the electron is knocked out of its orbit. (cf. Compton collision.)

Photoelectric Timer—An electronic timing mechanism in the circuit of an x-ray machine which limits the length of an exposure according to the amount of light produced on a fluoroscopic screen activated by the radiation.

Photoelectron, *n.*—An electron which has been ejected from its orbit by collision with a photon.

Photofluorographic Unit—A machine combining an x-ray tube and generator with a photographic camera ensemble to produce miniature radiographs especially in surveys of the chest. (Abbreviation: PF Unit.)

Photofluorography, *n.*—The process of combining x-ray and photographic apparatus for the purpose of producing miniature films as of the chest.

Photofluororoentgenography, *n.*—Photography of the fluoroscopic image in a special apparatus designed to make a miniature film for screening purposes.

Photographic Dosimetry—A photographic method for determining the degree of blackening of film using a densitometer, as a measure of amount of x-ray dosage.

Photographic Effect—The effect of light or x rays on a photographic emulsion, as in radiography.

Photographic Emulsion—The emulsion of the halides of silver, which forms the sensitive coating on a photographic or x-ray film.

Photomultiplier Tube—An electron-multiplier or photoelectronic device used to amplify images of low intensity, as on a fluorescent screen, and thus increase brightness several hundred times. This is the apparatus making the image amplifier possible.

Photon, *n.*—A packet of electromagnetic energy (quantum) having no charge or rest mass, and characterized by its wave length or frequency. Its energy content is the product of its frequency and Planck's constant, the equation for which is $E = hv$.

Photoradiography, *n.*—Photoroentgenography.

Photoroentgen, *n.*—A combination of x-ray and photographic apparatus designed to make a record of the image on a fluorescent screen for the purpose of obtaining miniature films as of the chest in screening surveys. Abbreviation: PR unit.

Photoroentgenogram, *n.*—A survey film made by means of a photoroentgen machine; a PR film.

Photoroentgenography, *n.*—Process of producing a photoroentgenogram or PR film through photography of fluorescent screen during a radiographic exposure and thus producing a miniature or survey film.

Photoscanner, *n.*—An apparatus such as a scintiscanner used to make a graphic recording on film of pulses derived from radioactivity of an isotope in an object or organism.

Photosynthesis, *n.*—Compounding of carbohydrates by green plants in the presence of sunlight through the agency of chlorophyll.

Phrenic, *adj.*—Relating to the diaphragm or to the mind; also the phrenic nerve, which supplies the diaphragm.

Phrenic Ampulla—Normal expansion at the lower end of the esophagus.

Phrenic Nerve—The nerve of respiration which supplies the diaphragm.

Phrenicectomy, *n.*—Resection or removal of the phrenic nerve.

Phrenicotomy, *n.*—Cutting of the phrenic nerve.

Phrenoesophageal, *adj.*—Pertaining to the diaphragm and esophagus.

Phrenospasm, *n.*—Spasm of the diaphragm.

Phrygian Cap—The cholecystographic appearance of the gallbladder showing a kinking between the body and the fundus.

Phthisis, *n.*—Pulmonary tuberculosis.

Phthisiologist, *n.*—A physician specializing in phthisiology.

Phthisiology—The sum of knowledge in regard to phthisis; a wasting away of the body or a part of the body; pulmonary consumption; tuberculosis.

Physics, *n.*—The science which deals with matter and energy and their relationship to each other, but not involving change of one substance into another.

Physiologic, *adj.*—Of or referring to physiology; of or pertaining to normal physiology as opposed to pathologic processes.

Physiological Effect—The effect of drugs and other agents on living tissues.

Physiology, *n.*—The science which deals with the vital processes of living things, animal and vegetable.

Phytobezoar, *adj.*—A ball of undigested vegetable material remaining in the stomach over a long period, such as, persimmons. (See also Trichobezoar.)

Pia Mater—Innermost of the meninges covering the brain and spinal cord.

Pigeon Breast Deformity—Congenital protrusion of the sternum; opposite of funnel breast.

Pile, *n.*—In nuclear engineering, a chain reacting fission system, usually consisting of uranium or plutonium interspersed with a moderator such as graphite, beryllium, or heavy water, together with systems for reflecting neutrons, shielding, cooling and controlling. (See nuclear reactor.)

Pilonidal Cyst or Sinus—Congenital hair-cyst at the tip of the sacrum or coccyx which may show only a dimple in the skin, but may become infected and cause an abscess.

Pineal, *adj.*—Shaped like a pine cone. The small red gland attached to posterior part of third ventricle of the brain.

Pineal Body (gland)—A small ductless gland which is present in the brain and has to do with growth.

Pinealoblastoma, *n.*—A malignant tumor of the pineal gland.

Pinealoma, *n.*—A benign tumor of the pineal gland.

Pin-Hole Photography—By making a radiograph through a pin-hole in a lead diaphragm there results an inverted image of the target acting in the same way as a pin-hole camera in photography. Used to determine the actual size of the focal spot of a target, and to indicate all points from which x rays emanate.

Pinna, *n.*—The upper portion of the external ear. (cf. helix.)

Pirie's Bone[1]—A supernumerary bone occasionally seen on the dorsal edge of the talus anteriorly.

[1] Pirie, A. Howard: Extra bones of the wrist and ankle found by roentgen rays. *Am. J. Roentgenol.*, *8*:569, 1921.

Piriform, (Pyriform) *adj.*—Pear-shaped, such as the piriformis muscle, and/or piriform sinuses of the larynx.

Pisiform, (Os Pisiforme, BNA) *n.*—Small pea-like bone of the wrist which articulates with the triquetrum.

Pitchblende, *n.*—A crude mineral containing a large proportion of uranium oxide which is the most important source of uranium and radium.

Pitressin, *n.*—Proprietary name of an extract of the pituitary gland of animals given to stimulate peristalsis, as in cholecystography, to remove obscuring gas.

Pituitary Adenoma—A tumor of the pituitary gland which may be one of three types, namely: chromophobic, basophilic, acidophilic or mixed.

Pituitary Calculus—Calcification within the pituitary gland.

Pituitary Fossa—A bony formation in the sella turcica at the base of the skull resembling a Turkish saddle which holds the pituitary gland.

Pituitary Gland (Hypophysis)—A glandular structure about the size of a pea which is suspended from the under surface of the brain into the pituitary fossa; one of the ductless endocrine glands.

Pituitrin, *n.*—A proprietary extract of the posterior lobe of the pituitary gland.

Placenta, *n.*—The organ by which the fetus is attached to the mother's uterus through the umbilical cord.

Placenta Praevia—An abnormal implantation of placenta as, for example, near the os uteri which may be demonstrated radiographically.

Plagiocephaly, *n.*—An asymmetrical skull giving it an oblique appearance with enlargement on one side posteriorly and on the other anteriorly.

Plagioprosopia, *n.*—An oblique facial presentation of the fetus.

Plain Film—A single radiograph of the abdomen; a survey radiograph, KUB, preliminary film or scout film. (Preferred to flat plate, an obsolete term.)

Planck's Constant—The natural constant of proportionality (h) relating the frequency of a quantum of energy to the total energy of the quantum: $h = E/\nu = 6.6 \times 10^{-27}$ erg sec.

Plane, n.—A geometrical level or surface, as the median plane, which divides a body or part into right and left halves; the horizontal plane divides them into upper and lower parts.

Planigram, *n.*—A radiograph made with a body section apparatus or planigraph with only one plane or stratum in focus.

Planigraph, *n.*—An x-ray apparatus designed for body section roentgenography.

Planigraphy, *n.*—One name for sectional roent-

genography. Not planography. (cf. Laminagraphy, tomography, stratigraphy and ordography.)

Plantar, *adj.*—Pertaining to the sole of the foot.

Plasma, *n.*—The fluid as distinguished from the cellar components of blood.

Plasma Cell Myeloma—This is similar to multiple myeloma and is characterized by innumerable sharply circumscribed defects throughout the bones involved, including most of the skeleton and skull.

Plaster Cast—A protective covering as of a fractured limb for maintaining satisfactory position of the parts.

Plastic Exudate—A soft pliable exudate thrown out around the fractured ends of bone.

-plasty—*suffix* meaning surgical alteration.

Plate, (*x-ray*), *n.*—A piece of glass coated on one side with an emulsion sensitive to radiation, now obsolete since the use of film beginning in 1917. Also positive element of an electron tube.

Plateau, *n.*—In radiation detector chambers, the level portion of the counting rate-voltage curve, for slightest changes in operating voltage produce changes in counting rate; also the horizontal surface of the proximal tibia (tibial plateau).

Platelet, *n.*—A thrombocyte or small, colorless corpuscle normally up to 250,000/cmm. of blood and which has to do with the blood clotting mechanism.

Platybasia, *n.*—Basilar impression; flattening of the base of the skull by invagination of cervical vertebrae.

Platypelloid, *adj.*—A broad but flat pelvis.

Platyspondyl—A combining form meaning broad flat vertebra.

Platyspondylia, *n.*—Broad, flat vertebra.

Pleur—*prefix* referring to pleura.

Pleura, *n.*—Membrane covering lung and lining of the pleural cavity, consisting of a visceral and parietal layer.

Pleural, *adj.*—Pertaining to the pleura.

Pleural Adhesions—Small fibrous strands joining the pleura to other body structures. These may be between the visceral and parietal pleura, between the interseptal pleura and the pericardium or between the lung and mediastinum or diaphragm, or even between two portions of the lung as within a fissure.

Pleural Cavity—The cavity within the thorax containing the lungs.

Pleural Effusion—Fluid filling the membranous sac covering the lung and lining of the chest. This may also occur in the interlobar fissures or be infrapulmonary.

Pleural Endotheliomas—These are carcinomas arising from the endothelial lining of the pleura and are of nodular or diffuse hemorrhagic type.

Pleural Nodulations—Nodules which may be seen on the pleura if pneumothorax is present; they are usually evidence of tumor metastases.

Pleural Plaques—Calcified sections or sheets which can usually be shown to be continuous with the visceral pleura, and result from old inflammatory disease.

Pleural Thickening—Increased density of the pleural coverings of the lung, unually associated with chronic inflammatory processes.

Pleurisy, *n.*—A disease marked by inflammation of the pleura.

Pleuritis, *n.*—Inflammation of the pleura, both acute and chronic.

Pleuropericardial, *adj.*—Pertaining to the pleura and the pericardium.

Pleuropericardial Adhesions—Adhesions extending between the pleura and the pericardium

Plexus, *n.*—A network; as, a plexus of nerves.

Plica, *n.*—A fold or bend, as the plicae circulares or valvulae conniventes of the jejunum.

Plombage, *n.*—An oleaginous or waxy substance such as iodoform-containing wax placed within the thoracic cavity to compress the lung as in tuberculous disease. Plastic balls may be used to perform a similar function.

Plumbism, *n.*—Lead poisoning. (cf. lead lines.)

Plummer-Vinson Syndrome—A form of secondary anemia associated with dysphagia and a transverse web in the proximal portion of the esophagus.

Plutonium, *n.*—Element #94 produced artificially. Its isotope Pu239 is an atomic explosive like U235. Its atomic number is 94 and atomic weight 239.

Pneumatocele—A hernial protrusion of the lung tissue. A tumor or sac containing gas; especially, a gaseous swelling of the scrotum.

Pneumatosis Cystoides Intestinalis—A collection of air beneath the serous coat of the intestine.

Pneumaturia, *n.*—Passage of air or gas in urine.

Pneumo—*prefix* indicating air-containing.

Pneumoarthrogram, *n.*—Roentgenogram of a joint after injection of air or other contrast medium.

Pneumoarthrography—Injection of air or a contrast medium into a joint space for the purpose of visualizing cartilaginous structures radiographically.

Pneumocephalus, *n.*—Air within the ventricles of the brain, usually as a complication of injury.

Pneumocholecystitis, *n.*—Gas or air in an inflamed gallbladder.

Pneumococcal, *adj.*—Of or pertaining to the pneumococcus.

Pneumococcic, *adj.*—Of or pertaining to a pneumococcus.

Pneumococcic Spondylitis—Inflammation of vertebrae due to the pneumococcus.

Pneumococcus, *n.*—The micro-organism producing pneumonia.

Pneumoconiosis, *n.*—A disease of the lungs caused by prolonged inhalation of fine dust particles. The term of injury from dust of any source.

Pneumocystogram, *n.*—X-ray examination of the urinary bladder after removal of urine and replacement with gas or air.

Pneumocystography, *n.*—Radiography of the bladder after filling it with air or gas.

Pneumoencephalogram, *n.*—Roentgenogram of the skull made after injection of air into spinal subarachnoid space showing the ventricular system and subarachnoid pathways. (cf. ventriculogram.)

Pneumoencephalography, *n.*—Radiographic examination of the skull after removal of varying amounts of spinal fluid and injection of air or gas into the subarachnoid space, cerebral ventricles and basal cisterns.

Pneumography, *n.*—A roentgenogram made after air has been introduced, as into the brain for making an encephalogram. Pneumography has nothing to do with the lungs.

Pneumolysis, *n.*—A procedure for cutting adhesions to free the lung from the parietal pleura, so that artificial pneumothorax can be made complete.

Pneumomediastinum, *n.*—Air trapped between the layers of pleura within the mediastinum.

Pneumonephrosis, *n.*—Air within the kidney pelvis. Usually in such cases, there is both pus and gas within the kidney pelvis.

Pneumonia, *n.*—An acute infectious or inflammatory disease of the lungs of various types: aspiration, lobar, bronchial, chronic, unresolved, primary atypical or viral, Loeffler's, and Friedlander's.

Pneumonitis, *n.*—A condition of localized acute inflammation of the lung without gross toxemia; benign pneumonia.

Pneumonitis, Uremic—Pulmonary edema, principally involving the hila and the midlung zones secondary to uremia.

Pneumopericardium, *n.*—Air within the pericardial sac.

Pneumoperitoneography, *n.*—Visualization of the peritoneum and intra-abdominal organs by means of air injection.

Pneumoperitoneum, *n.*—Air in the peritoneal (abdominal) cavity; used as an aid in examination of the abdominal organs, and to limit diaphragmatic excursion in treatment of pulmonary tuberculosis.

Pneumopyelography, *n.*—Injection of air into the kidney pelvis for use particularly in showing calculi and papillomata to best advantage. This method is not used more widely because of danger of air embolism.

Pneumothorax, *n.*—Air in the thoracic (chest) cavity of several types: diagnostic, traumatic, and spontaneous.

Poker Deformity—Extreme straightening of the vertebral column from rigidity of rheumatoid spondylitis or Marie-Strümpell Disease. (See also "Bamboo" Spine.)

Poker Spine—Straight like a poker in rheumatoid arthritis of the vertebral column.

Polarity, *n.*—The negative or positive electric charge of a body or terminal.

Polarity Indicator—An instrument on an x-ray machine to indicate the phase of the current under which the machine is operating.

Pole, *n.*—The extremity of an organ such as the upper and lower pole of the kidney.

Pole of a Magnet—The ends having affinity for the north or south magnetic poles of the earth.

Poly—*prefix* meaning many.

Polyarthritis, *n.*—Arthritis of many joints.

Polyarthritis, Juvenile—Still's Disease or rheumatoid arthritis in young children.

Polyarticular, *adj.*—Involving many joints.

Polycystic Kidney—Congenital dysplasia in which there are many cysts throughout the kidney substance.

Polycystic Renal Disease—Same as polycystic kidney.

Polycythemia, *n.*—A disease of the blood in which the red blood cells are greatly increased in number.

Polycythemia Rubra Vera—Primary erythrocytosis of unknown etiology.

Polycythemia, Secondary—Erythrocytosis of known etiology.

Polydystrophy, *n.*—Multiple distortions of the bones and joints.

Polymerization, *n.*—Combination of two or more molecules of a substance to form a more complex molecule.

Polymorphism, *n.*—The property which permits a substance to exist in more than one form, particularly with regard to crystalline structure, for example, sulfur exists in a crystalline and an amorphous form.

Polyostotic, *n.*—Multiple bony involvement as in fibrous dysplasia. (cf. monostotic.)

Polyp (polypus), *pl.* **-i,** *n.*—A tumor with pedicle, especially on mucous membrane. There is also a sessile variety.

Polyphase, *n.*—An electric current having many phases.

Polypoid, *adj.*—Shaped like a polyp.

Polyposis, *n.*—Having multiple pedunculated growths, as in the colon.

Polypus (polyp), *pl.* **-i,**—A swelling or outgrowth from a mucous membrane.

Polyserositis, *n.*—Inflammation of all the serous membranes.

Pons, *n.*—A bridge; in the central nervous system the pons Varoli, or a portion of the brain stem connecting the midbrain with the medulla.

Poor Visualization—Term used in cholecystography when the gallbladder is not clearly seen on the roentgenogram following ingestion of opaque medium.

Popliteal, *adj.*—Referring to the posterior surface of the knee joint.

Popliteal Line—The fold or crease on the posterior surface of the knee joint.

Popliteal Notch—The deep notch (Intercondylar) between the condyles of the femur, best demonstrated on the tunnel view.

Popliteal Space—The space behind the knee.

Popliteal Surface—The surface of the leg covering the popliteal space in back of the knee joint.

Porencephalic Cyst—Herniation of a portion of the ventricles of the brain into the cerebral substance. (cf. peripheral porencephalic cyst.)

Porencephaly, *n.*—A herniation of the cerebral ventricles; also, peripheral porencephalic cysts.

Porosis, *n.*—A callus formed about the ends of a fractured bone. A thickened induration. A condition marked by pore formation.

Port (Portal), *n.*—An area of body surface through which a beam of radiation is directed, usually in the treatment of malignant disease. (cf. cross-firing.)

Portable, *adj.*—Something which can be carried, such as a portable x-ray machine. To be distinguished from a mobile unit for making bedside x-ray examinations.

Portal, *adj.*—The portal system of veins which drain the intestinal tract and empty into the inferior vena cava, also ports (portals) of entry of x-ray beam in radiotherapy.

Portosplenogram, *n.*—Radiographic delineation of the liver by directly injecting the portal vein or the spleen with 35 to 75 per cent Diodrast solution. (See also splenoportography.)

Portosplenography, *n.*—Radiographic examination of the abdomen after opaque material has been injected into the portal vein or spleen.

Portovenography—Same as portosplenography.

Porus Acousticus, *pl.* **pori acoustici,**—Outer end of the internal auditory opening in the petrous portion of the temporal bone.

Position, *n.*—(Standard for radiography.) A set of positions generally accepted by radiologists as most satisfactory for radiographic examinations.

Positive Charge—An atom or group of atoms in which, by some chemical change the normal number of electrons are removed from the atom permitting the positive charges of the nucleus to predominate.

Positron, *n.*—A positively charged particle having the mass and equivalent charge of an electron. A particle having negligible weight and a charge of plus 1. (cf. Proton.) This type of particle appears in the decay of certain radioactive substances, in cosmic radiation, and during the absorption of gamma and roentgen rays by the pair production process.

Post—*prefix* meaning after or behind.

Post-Bulbar—Ulcer of the duodenum occurring in the portions beyond the bulb.

Post-Esophagectomy—Following removal of the esophagus.

Post-Evacuation (Post-Evac.)—A film of the large bowel made after the patient has evacuated the contrast medium.

Post Irradiation—After radiation therapy, such as a reaction.

Postnatal Development—The growth of the body after birth.

Post-Operative (Post-Op.)—The findings or appearance, as on roentgen examination, after an operation.

Post-Reduction Film—A radiograph made after setting or reduction of a fracture. Also refers to follow-up or serial films in fractures.

Post-Traumatic Cysts—Leptomeningeal cysts which form as fluid-filled collections in the subarachnoid spaces following injury.

Posterior, *adj.*—Refers to the back of a structure or part.

Posterior-Anterior Films — Roentgenograms made in the PA projection with reference to the x-ray tube, that is, where the back of the part is directed toward the x-ray tube. (cf. anterior-posterior.)

Postero—*prefix* meaning behind.

Postero-Anterior—Same as posterior-anterior. (cf. antero-posterior.)

Posterolateral, *adj.*—Behind and to a side, particularly the outer one; away from the midline.

Posteromedial, *adj.*—Behind and to a side, particularly the inner one; toward the midline.

Postural, *adj.*—Pertaining to position of the body as the head-down position to promote drainage of secretions in bronchiectasis and/or following bronchography.

Potency, *n.*—The ability of the male to perform the sexual act.

Potential, *n.*—Pressure of electricity or voltage.

Potential Difference—The amount of work required to bring a unit charge or mass from one point to another.

Potentiometer, *n.*—A form of resister so arranged that a sliding connection may be moved along its entire length in order to provide variable voltage.

Potter-Bucky Diaphragm[1]—This term is a misnomer since only Bucky invented the grid to reduce effects of scattered radiation. Bucky worked out (U.S. Patent #1,184,987,1915) the mechanical means for eliminating the grid shadows well before Potter made his proposal. (See also, Bucky Diaphragm.)

Pott's Disease—Osteitis or caries of the vertebrae, of tuberculous origin. Symptoms: Stiffness of vertebral column, pain on motion, tenderness on pressure, paraspinal abscess formation, paralysis, local kyphus formation.

Pott's Fracture—Fracture of the lower end of the fibula, and of the medial malleolus of the tibia.

Pott's Puffy Tumor[2]—A circumscribed swelling of the scalp indicating an underlying osteitis of the skull or an extradural abscess.

PR (*abbrev.*), **Photoroentgen,**—A combination of camera and x-ray machine to make a miniature or survey film. (See also, PF.)

PR Film—A survey film, usually of the chest, made with a photoroentgen machine.

Praevia, *adj.*—Latin for "leading the way," as in placenta praevia where the placenta is near the internal uterine os.

Pre—*prefix* meaning in front of or before.

Preauricular, *adj.*—Anterior to the tragus and external auditory canal.

Preauricular Node—Lymphatic gland anterior to the tragus and external auditory canal.

Predominance, *n.*—Enlargement of a heart chamber such as the left ventricle in cardiomegaly.

Pregnancy, *n.*—Gravidity; the condition of the female mammal when with child.

Preliminary Film—A film made before injection of opacifying materials as for excretory urography, so that the possibility of opaque material already in the kidney structures may be excluded. (cf. KUB, scout film, plain film, or survey radiograph.)

Preperitoneal Fat Line—A linear shadow of radiolucency seen in a plain film of the abdomen between the abdominal muscle layer of the flank and the peritoneum. (Same as properitoneal fat line.)

Preponderance, *n.*—Enlargement of a heart chamber such as the left ventricle compared with other chambers in cardiomegaly.

Prepyloric, *adj.*—The portion of the stomach just before the pylorus; the distal part of the antrum.

Prepyloric Fold—A normal crescentic depression proximal to the pylorus which may resemble an ulcer crater.

Presentation, *n.*—With relation to the fetus, the part of the body presenting at the birth canal, such as cephalic or breech.

Prespondylolisthesis, *n.*—This condition exists when the patient demonstrates the defects in the isthmi which could lead to a frank spondylolisthesis, but which has not as yet developed.

Pressure Atrophy—Atrophy of bony structure from pressure of an abnormal soft structure such as a tumor.

Pressure Mark—A crescentic artefact produced on x-ray film by pressure of finger or nail before processing.

Prestenotic, *adj.*—Proximal to the site of stenosis. (cf. Poststenotic.)

Prevertebral, *adj.*—In front of or anterior to the vertebra.

Primary, *adj.*—The first as compared to secondary.

Primary Circuit—The first winding on the core of a transformer constitutes the primary circuit.

Primary Factors—The primary radiographic factors considered when making an x-ray exposure are: 1) kilovoltage, 2) exposure time, 3) milliamperage and 4) focus-film distance.

Primary Tuberculous Complex—A form of childhood tuberculosis having characteristic involvement of the hilar glands and the parenchyma of the lung. This is spoken of as stable or unstable. (See also Rauke Complex).

Principal Ray—The central ray coming from the target of an x-ray tube perpendicular to its long axis; these rays show the least divergence and therefore, produce the least distortion in roentgenography.

Priodax—An oral proprietary preparation for cholecystography.

Pro—*prefix,* meaning forward or in front of.

Process, *n.*—Any projecting part or extension. The process of developing and fixing x-ray films after exposure.

Processing, *n.*—Development, clearing and fixation of photographic or x-ray films.

Process of Bone—A pronounced projection of a bony structure; such as the transverse process of vertebrae.

[1] Potter, H. E.: Diaphragming roentgen rays; Studies and experiments. *Am. J. Roentgenol.*, 3:142–145, 1916. *idem.:* The Bucky diaphragm principle applied to roentgenography. *Am. J. Roentgenol.*, 7:292–295, 1920.

[2] Pott, Percival: *Observations on the Nature and Consequences of those Injuries to which the Head is Liable from External Violence.* London, C. Hitch & L. Hawes, 1760.

Proctitis, *n.*—Inflammation of the mucous membrane of the rectum.

Profunda Method—A method used in the localization of foreign bodies in the tissues.

Progressive Diaphyseal Dysplasia—Engelmann's Disease.[1] This condition is marked by a homogeneous fusiform enlargement of the cortical layers of the long bones and occasionally of the short tubular bones. Characteristically, the epiphyses and metaphyses remain uninvolved so that with increase in growth of the individual, there is a disproportionate elongation of the extremities compared with the size of the trunk.

Projection, *n.*—The employment of x rays in a certain direction as the PA or Towne projections.

Prolapse, *n.*—Extrusion of a part such as prolapse of the gastric mucosa through the pylorus into the duodenum.

Proliferation, *n.*—Multiplication of cells.

Prominence, *n.*—Any elevation from the surrounding part as on a bone.

Prominent, *adj.*—Something which stands out or is conspicuous such as a pulmonary artery or vascular markings.

Promontory, *n.*—A projecting process or part as the promontory of the sacrum.

Prompt Gamma—Gamma rays emitted at the time of fission or at the radioactive disintegration of a nucleus.

Pronation, *n.*—Rotating into a prone position; ventral side down; turning of the hand with dorsal surface uppermost.

Prone, *adj.*—A position of the body lying face downward; opposite of face up or supine.

Pronephros, *n.*—The primitive kidney in the embryo.

Properitoneal Fat Line—A linear radiolucent shadow seen in the flank adjacent to the peritoneum. (Same as preperitoneal fat line.)

Property, *pl.* **-ies,** *n.*—(Physical.) The inherent qualities of a substance or structure.

Prophase, *n.*—The earliest stage of mitosis when the chromosomes shorten and thicken preliminary to forming a metaphase plate.

Proportional Counter—A gas-filled radiation detection tube in which the pulse produced is in proportion to the number of ions formed in the gas by the action of the primary ionizing particle.

Proportional Region—Voltage range where the gas amplification is greater than 1, and where the charge collected is in proportion to the charge produced by the initial ionizing event.

[1] Engleman, G.: Ein fall von osteopathia hyperostotica (Sclerotisans) multiplex infantilis. *Fortschr. a. d. Geb. d. Röntgenstrahlen, 39*:11-1-1106, June 1929.

Proptosis, *n.*—A forward displacement or protrusion of the eyeball or exophthalmos.

Prostate, *n.*—A gland located at the base of the bladder almost surrounding the urethra in the male.

Prosthesis, *n.*—An artificial device used as a substitute for a part of the body. (See chart pp. 108–109.

Prostigmin, *n.*—Proprietary name of neostigmine injected to stimulate peristalsis and get rid of gas, as in a gallbladder examination.

Protactinium, Protoactinium, *n.*—Element number 91. Its isotope, found in nature, has a mass number 231 and is radioactive. The atomic weight is 231 and the atomic number is 91.

Protection, Radiation—Protection of patient and operator from excessive harmful exposure to x rays or radium.

Protium, *n.*—The name used to designate the hydrogen isotope of mass 1, (1^{H1}) in contradistinction to deuterium, (1^{H2}) and tritium (1^{H3}).

Proton, *n.*—The positively charged nucleus of an atom; the nucleus of a hydrogen atom is composed of a single proton. A nuclear particle having a weight of 1 and a charge of plus 1. The number of protons in a nucleus determines the nuclear charge or atomic number. (cf. Positron.)

Protoplasm, *n.*—A thick, viscous semifluid, jelly-like, colorless, translucent material which is the seat of more or less active chemical changes both destructive and constructive, forming the essential living material of all plant and animal cells.

Protraction, *n.*—Administering x radiation by using a low intensity (fractionated) beam protracted over a long period of time. (Regaud's method).[2]

Protrusio Acetabuli—Protrusion of the femoral head through the floor of the acetabulum. (cf. Otto Pelvis.)

Protuberance, *n.*—A hump or prominence projecting beyond the surrounding surface; i.e. the external occipital protuberance.

Proximal, *adj.*—Near to the central portion or trunk of the body; as, the proximal fragment of a fracture, the fragment nearest the body. (Opposite of distal.)

Psammoma Bodies—Calcified sand-like bodies usually round with concentric laminae, which occur normally in the pineal gland; also in benign and malignant tumors of connective tissue and the meninges. (cf. Schwannoma)

Pseudo—*prefix* meaning false.

[2] Regaud, C., and Ferrour, R.: Sur la diversité des tissus traités par les rayons X, en rapport avec le facteur temps, et sur la relativité de la dosimétrie biologique dans la roentgentherapie des tumeurs malignes, *Arch. Inst. de Radium de L'univ. de Paris, 2*:298, 1930.

Pseudoarthrosis, *n.*—A false joint developing after a fracture that has not united; also a congenital false joint as between a transverse vertebral process and the sacrum.

Pseudocyst, *n.*—A fluid accumulation similar to a cyst but without a capsule.

Pseudodiverticulum, *n.*—A flask-like outpouching of the wall of the duodenum with its neck constricted because of scar formation complicating chronic duodenal ulcer.

Pseudohermaphroditism, *n.*—A false appearance of mixed sex in which the gonads of each sex are not actually represented.

Pseudo Fracture—An apparent but not actual fracture; a false fracture. See also "Umbau Zones," and Looser's "Transformation Zones."

Pseudo Fracture of First Rib—A congenital anomaly of the first rib resembling healing fracture with apparent callus formation. Infrequent, occurring once per 1300 exams.[1]

Pseudo Optic Foramen[2]—An apparent foramen or opening just lateral to the true optic foramen seen in the Rhese projection of the skull. It is the projected cross section of an air-containing anterior clinoid process.

Pseudopolyposis, *n.*—Occurrence of multiple rounded areas resembling actual polyps but are formed by overgrowth of granulation tissue complicating ulcerative colitis.

Pseudopolyps, *n.*—Polyps or only apparent polyps, such as droplets of oil seen in barium enemas. See also Pseudopolyposis.

Pseudotumor,[3] *n.*—Inverted appendiceal stump simulating polypoid neoplasm in cecum.

Psittacosis, *n.*—An infectious disease of psittacine birds, occasionally transmitted to humans.

Psoas Muscles—Heavy muscles of the spine.

Psoas Shadows—Roentgenographic appearance of the psoas muscles, which are pyramidal in shape, extending downward on either side of the vertebral column from the 12th dorsal vertebra.

Psoriatic Arthritis—A form of rheumatoid arthritis associated with psoriasis.

Pterion, *n.*—An anatomic point of the lateral aspect of the skull in the temporal fossa at the junction of the greater wing of the sphenoid with the squamous portion of the temporal, parietal and frontal bones.

Pterygoalar Bar[4]—A bony bridge between the lateral pterygoid plate and the greater wing of the sphenoid bone, lateral to the foramen spinosum and the foramen ovale. The main clinical significance is that it presents an obstacle to passage of a needle into the foramen ovale from the lateral approach.

Pterygoid Hamulus—The hamular process of the lateral pterygoid plate.

Pterygoid Plates—The medial and lateral winged processes extending posterolaterally from the body of the sphenoid bone.

Pterygospinous Bar[5]—A bony bridge extending from the lateral pterygoid plate to the spine of the sphenoid bone medial to the foramen spinosum.

Ptosis, *n.*—Filling or sagging down in an unnatural position, as a kidney.

Ptotic, *adj.*—Pertaining to or affected with ptosis.

Pubic, *adj.*—Of or pertaining to the pubis or the pubic symphysis.

Pubic Bone—The most anterior portion of the two paired innominate bones forming the upper part of the pelvis anteriorly and joining with the ischium and ilium on either side.

Pubic Symphysis—Junction of the pubic bones in the midline anteriorly.

Pubic Tubercle—A prominent bony point or spine on the upper border or crest of the body of the pubic bone to which the inguinal (Poupart's) ligament is attached.

Pubis, *n.*—One of the bones forming the anterior portion of the pelvis, uniting anteriorly with its fellow to form the symphysis pubis.

Pudendal Artery—A vessel supplying the pudendum or female external genitalia.

Pulmonary, *adj.*—Pertaining to the lungs.

Pulmonary Alveolar Microlithiasis[6]—A familial disease of unknown etiology manifested by extremely fine sand-like deposits in both lung fields, predominantly at the bases, and having a slowly progressive fatal course.

Pulmonary Artery—The main blood vessel seen in the hila of the lungs carrying venous blood from the right heart to the lungs.

Pulmonary Artery Embolsim—Occlusion of the pulmonary artery by an embolus.

[1] Etter, L. E.: Osseous abnormalities of the thoracic cage seen in forty thousand consecutive chest photoroentgenograms. *Am. J. Roentgenol. & Rad. Ther. 51:3*, Mar. 1944.

[2] Etter, Lewis E.: *Atlas of Roentgen Anatomy of the Skull*, p. 157, Springfield, Illinois, Charles C Thomas, 1955.

[3] Weber, Harry M., and C. Allen Good, Jr.: Invaginated appendiceal stump roentgenologically simulating polypoid neoplasm, *Amer. J. Roentgenol. & Rad. Ther., 46:585*, 1941.

[4] Chouke, K. S.: On incidence of foramen civinini and porus crotaphitico buccinatorius in American whites and negroes. I. Observations on 1544 skulls. *Am. J. Phys. Anthropol., 4:203-225*, June, 1946.
Chouke, K. S., and Hodes, P. J.: Pterygo-alar bar and its recognition by roentgen methods in trigeminal neuralgia. *Am. J. Roentgenol. & Rad. Ther., 65:180*. 1951.

[5] Priman, Jacob, and Etter, Lewis E.: The pterygospinous and pterygoalar bars. *Med. Rad. & Photog., 35:1*, 1959.

[6] Sosman, M. *et al.*: The Familial Occurrence of Pulmonary Alveolar Microlithiasis, *Am. J. Roentgenol., Rad. Ther. and Nuc. Med., 77:6*, June 1957.

Pulmonary Conus—This structure is best seen in the right anterior oblique projection and represents the base of the pulmonary conus artery segment, the left or anterior portion of the right ventricle and forms the outflow tract of the right ventricle.

Pulmonary Edema—Collection of clear watery fluid in the alveoli associated with passive congestion.

Pulmonary Embolism—A blood clot or embolus plugging a pulmonary artery.

Pulmonary Emphysema—Enlargement of the alveolar air sacs through chronic increase of intrapulmonary pressures.

Pulmonary Fibrosis—Thickening of fibrous tissue of any of the interstitial, peribronchial or perivascular structures of the lung. Roentgenographically, fibrosis produces accentuation of the pulmonary markings associated with evidence of pulmonary emphysema such as blebs and bullae.

Pulmonary Hypertension—Elevation of normal pressure in the pulmonary circulation.

Pulmonary Hypotension—Decrease in the normal pulmonary pressure.

Pulmonary Infarction—A devitalized area in the lung produced by embolism of an artery.

Pulmonary Osteoarthropathy — Hypertrophic pulmonary osteoarthropathy is manifested by chronic pulmonary and cardiac ailments with extensive symmetrical thickening of long and short tubular bones because of periosteal new bone formation. There is also associated clubbing of the fingernails and toe nails.

Pulmonary Sequestration—Separation of a segment or several segments of the lung from their normal connection with the rest of the bronchial tree. In an extralobar type, an accessory lobe is formed which is enclosed within its own pleural sheath with a hilus attached to parietes.

Pulmonary Valve—A cardiac valve having three cusps between the right ventricle and the pulmonary artery.

Pulsating, *adj.*—Particularly recurring in beats but not having a regular cycle; for example, pulsating current in an x-ray tube; a pulsating aneurysm which expands with each heart beat.

Pulse-Height Selector—An instrument having a circuit arranged to select and pass voltage pulses in a restricted range of amplitudes.

Pulsion, *adj.*—Pushing, especially from within outwards, as in a pulsion diverticulum of the esophagus.

Pulsion Diverticulum (Zenker's)—Most commonly found projecting from posterior wall of esophagus at level of pharynx, and formed by pressure from within. (cf. traction type.)

Punctate—Having pinpoint punctures or depressions on the surface; marked with dots.

Pupin, Michael—A research scientist working at Columbia College, New York, who collaborating with Thomas A. Edison,[1] invented the use of fluorescent intensifying screens in 1896. This marked a tremendous advance in radiography, making possible markedly shortened exposures for the first time.

Purpura, *n.*—A disease manifested by spontaneous hemorrhages beneath the skin and in other parts of the body.

Purulent, *adj.*—Consisting of or containing pus.

Pus, *n.*—The fluid resulting from bacterial infection and body tissue elements attempting to combat the infection.

Putrefaction, *n.*—Rotting; decomposition; specifically, disintegration of protein material into less complex substances.

Putrid—Decayed or rotten.

Putti's Joint[2]—Named for an Italian orthopedist who described weak back from apophyseal joints in AP direction in lumbar vertebrae.

Pyarthrosis, *n.*—Pus within a joint.

Pyelectasis—Dilatation of the renal pelvis. (Pelviectasis.)

Pyelitis, *n.*—Inflammation of the kidney pelvis.

Pyelitis Cystica—Multiple polypoid granulations covering the mucosa of the kidney pelvis and ureter. (See also Ureteritis Cystica.)

Pyelocaliectasis, *n.*—Enlargement of both the pelvis and the calyces of a kidney.

Pyelogenic, *adj.*—Of or pertaining to the kidney pelvis and ureters.

Pyelogenic Cyst—A diverticulum of a kidney calyx, forming a smooth-walled sac of no pathological significance. (Also calyceal diverticulum.)

Pyelogram, *n.*—A radiographic visualization of the kidney pelves and ureters by intravenous or retrograde instillation of opaque material. Commonly spoken of as IVP (intravenous pyelogram), but this is a misnomer. Preferable term is excretory urogram.

Pyelography, *n.*—Roentgenographic examination of the kidneys after injection of opaque material, either by the retrograde route or by intravenous injection. Also IVP (intravenous pyelography).

Pyelointerstitial, *adj.*—Referring to the interstices of the renal pyramids.

Pyelolymphatic, *adj.*—Referring to the lymph drainage of the kidney pelves.

Pyelolymphatic Backflow—Visualization of the lymphatic channels of the kidney from the

[1] Fuchs. Arthur W.: Edison and roentgenology. *Am. J. Roentgenol., LVII*:2, Feb. 1947.
[2] Putti. V.: *Jour. Bone & Joint Surgery, 11*:4, 798 1929.

back pressure, usually in retrograde pyelography.

Pyelonephritic, *adj.*—Of or pertaining to the kidney pelves.

Pyelonephritis—Inflammation of the kidney substance and pelvis.

Pyeloparenchymal, *adj.*—Of or pertaining to the kidney pelvis and the parenchymal structures of the kidney.

Pyeloparenchymal Backflow—Extravasation of opaque medium into the parenchyma of the kidneys from back pressure in retrograde urography.

Pyelorenal, *adj.*—Of or pertaining to the kidney pelvis and kidney.

Pyelotubular, *adj.*—Of or pertaining to the kidney pelvis and tubules of the kidney.

Pyelotubular Backflow—Extravasation of opaque medium into the tubules of the kidney during retrograde urography.

Pyelovenous Backflow—Extravasation from the renal pelvis into the venous circulation of the kidney due to back pressure during retrograde urography.

Pyloric, *adj.*—Of or pertaining to the pylorus.

Pyloric Stenosis—Partial or complete closure of the pyloric canal.

Pylorospasm, *n.*—Spasm of the pyloric sphincter.

Pylorus, *n.*—(pars pylorica of stomach) The lower end of the stomach just before it joins with the duodenum.

Pyo—*prefix*, meaning pus.

Pyogenic, *adj.*—Caused by pus-forming organisms.

Pyogenic Arthritis—Pus-producing or suppurative arthritis due to organisms other than the tubercle bacillus.

Pyohemopneumothorax, *n.*—Collection of air, blood and pus in the thoracic cavity.

Pyonephrosis, *n.*—Pus in the kidney pelvis and calyces.

Pyopneumothorax, *n.*—Mixture of purulent material with air in the thoracic cavity.

Pyorrhea, *n.*—Infection of the gingival covering of the alveolar process about the margin of a tooth.

Pyriform (Piriform), *adj.*—Pear-shaped, as glenoid fossa of scapula.

Pyriform (Piriform) Sinuses—Fossae on each side of the larynx lateral to the aryepiglottic folds.

Pyuria, *n.*—Pus in the urine.

Q

Quadrant, *n.*—Any one of the four corresponding parts or quarters of the body, especially those of the abdomen.

Quadriceps Tendon—Four headed tendon of quadriceps muscle in the thigh.

Quadrigeminal, *adj.*—Four-fold.

Quadrigeminal Plate—Consists of the superior and inferior colliculi and forms the roof of the midbrain over the aqueduct of Sylvius.

Quality, *n.*—In electricity, pressure represented by the voltage. Also, the degree of "hardness" of an x-ray beam specified by its half value layer (HVL).

Quantity, *n.*—Amount of electricity, represented by the amperage. Also, the amount of x radiation, measured in r.

Quantum, *n.*—A photon, each carrying one quantum of energy.

Quantum Theory—Originally promulgated by Planck and since extended and confirmed, that in the emission or absorption of energy by atoms or molecules the process is not continuous, but takes place by steps, each step being the emission or absorption of an amount of energy (hv), called the quantum, where h is Planck's Constant, and v is a frequency associated with the atom or molecule.

Quenching, *n.*—A method of holding back continuous or multiple discharges in a counter tube employing gas amplification.

Quenching Vapor—Used to quench avalanche ionization in Geiger-Müller counters by means of polyatomic gas.

Quinine, *n.*—The active principle of Cinchona bark.

R

r—The unit of quantity of Roentgen rays; the unit for measuring x-ray dosage (See also Roentgen.)

Rabbit, *n.*—A term indicating a small container which may be propelled through air tubes or hydraulically in a nuclear reactor for the purpose of experimentally exposing substances to radiation and neutron flux of the active section. It may also be used for quick removal of samples having extremely short half-lives.

Racemose, *adj.*—A branching structure with globular terminations similar to a bunch of grapes.

Racemose Angioma—A benign blood vessel tumor branching like a bunch of grapes.

Rachitic, *adj.*—Of or pertaining to rickets.

Rachitic Pelvis—A generally contracted pelvis resulting from rickets in infancy. and one which may make normal delivery impossible.

RAD, *n.*—Radiation Absorbed Dose—The radiation energy absorbed by a small volume of tissue, divided by this volume. Its unit is 100 ergs/gram, or one RAD.

RAD Equivalent Man (REM)—The RAD, multiplied by the biological effectiveness of a particular quality of radiation, relative to that of conventional x radiation.

Radiability, *n.*—The property of increased or decreased permeability to x rays, such as increased or decreased radiability.

Radiable, *adj.*—Permeable by x rays.

Radial Head, Dislocation of the—Displacement of the head of the radius from its normal relationship with the capitellum of the humerus, with or without fracture.

Radial Head, Fractures of the—Disabling fractures which may require surgical removal of the proximal portion of the fractured head.

Radiant, *n.*—Of or having to do with radiation.

Radiate, *v.*—To expose to radiation or radiate with a part or structure under treatment.

Radiation, *n.*—The projection through space of any form of electromagnetic waves. This may be primary as that emanating directly from the focal spot of an x-ray tube, or scattered, which is produced by anything in the path of x rays. (cf. Irradiation).

Radiation Absorbed Dose (RAD)—The radiation energy absorbed by a small volume of tissue, divided by this volume. Its unit is 100 ergs /gram, or one RAD.

Radiation Burn—Reaction of skin or mucous membranes to cancericidal doses of radiation. These reactions will vary with the quality and amounts of radiation used, and will usually heal completely within weeks of completion of treatment.

Radiation Fibrosis—Formation of fibrous tissue as the result of x or gamma radiation to a part.

Radiation Fibrosis of Lungs—Peribronchial fibrosis following upon areas of pneumonitis within the lungs caused by irradiation by either gamma or x rays.

Radiation Necrosis—Devitalization of bone as in the mandible following x-ray therapy for intraoral or pharyngeal lesions, in which cancericidal doses have necessarily been employed.

Radiation Pneumonitis—Inflammation followed by fibrosis of the lung resulting from x-ray therapy, as from cancericidal doses in treatment of breast cancer.

Radiation Reaction—The reaction of living tissues to the effects of radiation.

Radiation Resistance—The resistance of living cells to the effects of irradiation.

Radiation Sickness—A form of reaction, simulating allergy, which may develop following x-ray therapy or accidental exposure to excessive radiation and presenting the symptoms of nausea, vomiting, diarrhea and often psychic depression. The illness may be acute or chronic and may result in either recovery or death.

Radiation Therapy—Use of radiation of any type in the treatment of disease.

Radiation Ulcer—Occurs in a third degree radiation burn and is very difficult to heal.

Radiator Tube—An x-ray tube having a radiator for the dissipation of heat.

Radical, *adj.*—Pertaining to the root or fundamental cause; a radical operation such as radical mastectomy designed to remove every trace of diseased tissue.

Radicle, *pl.-s, n.*—A tiny tributary of a vein resembling a root; also smallest branches of nerves.

Radicular, *adj.*—Of or pertaining to a root, such as a nerve root.

Radicular Cyst—One formed at the apical portion or root of a tooth.

Radio—A combining form used in physics to refer to radiant energy, e.g. radioactive.

Radioactive, *adj.*—The property of disintegration of certain nuclides with emission of radiation.

Radioactive Chain—A series of chemical elements in which the product of radioactive disintegration is also radioactive.

Radioactive Deposit—The deposit from the natural disintegration of radium known as, Radium, A, B, and C, which is radioactive and is responsible for therapeutic action of radium.

Radioactive Dust—Fallout from explosions of nuclear devices, and natural sources.

Radioactive Equilibrium—The state in which the amount of a radioactive isotope stays constant inasmuch as new atoms are being formed at the same rate at which they disintegrate through radioactive decay.

Radioactive Tracers—Radioactive isotopes used in tiny amounts as "labels."

Radioactive Waste—Waste products from mining and refining of radioactive ores, fabrication and processing of nuclear fuel elements for reactors, for research with radioactive isotopes and accelerators, etc.

Radioactivity, *n.*—The property of spontaneous disintegration and emission of gamma, alpha, and/or beta rays, as from such natural sources as the elements radium and uranium.

Radioarsenic, As^{74} (Sodium Radioarsenic)—A radioisotope used for localization of brain tumors.

Radioassay, *n.*—A method of estimating uptake and excretion of a radioisotope as in determining thyroid function by use of I^{131}.

Radioautograph, *n.*—Same as autoradiograph, where a record of the structure of an object may be made on a photographic film by the object's own radioactivity.

Radiobiology, *n.*—The science which deals with radiation effects on biological structures.

Radiocarpal, *adj.*—Of or pertaining to the radiocarpus as the radiocarpal joint, the joint between the radius and the proximal row of carpal bones.

Radiochromium, Cr^{51} (Radio-chromic Chloride)—Used for labeling erythrocytes in studies of circulating erythrocyte volume and evaluation of cell survival in the circulation.

Radiocinematography, *n.*—A moving picture of the passage of an opaque medium through the internal organs as shown by x-ray examination.

Radiocobalt^{60}—A radioisotope used in diagnosis of pernicious anemia by labeling vitamin B_{12} with it. Also used (Co^{60}) as source of gamma radiation in radiotherapy.

Radiodontia, *n.*—Employing x rays for examination of the teeth and investing structures.

Radiogold, Au^{198} (Aurcoloid, Abbott)—A radioisotope used as a tracer to localize tumors in the liver.

Radiograph, *n.*—A photographic film which has been exposed to x rays after they have passed through a part to be examined.

Radiograph, *v.*—To make an x-ray exposure or radiographic examination.

Radiographer, *n.*—A term used in Great Britain to signify an x-ray technician, one skilled in the art and practice of making x-ray examinations.

Radiographic, *adj.*—Of or pertaining to a radiograph or radiography.

Radioiodinated Rose Bengal (I^{131} Rose Bengal)[1]—Used as a test of hepatic function depending upon pattern of uptake of I^{131} by the liver.

Radioiodine, I^{131}—A radioisotope used in diagnostic tests of thyroidal function. In IHSA (Iodinated human serum albumin) it is used to study rates of blood flow, cardiac output, blood volume and volume of ascitic fluid. It is also used for radiotherapy of some thyroid diseases.

Radiography, *n.*—The science which deals with the making of x-ray transparencies or radiographs. (cf. Roentgenography.)

Radioiron, Fe^{59}—A radioisotope used to measure absorbability of iron from the intestine, demand for iron by the bone marrow, sites of erythropoiesis and survival of labeled cells.

Radioisotope—A chemical element that has been made radioactive through bombardment by neutrons in a cyclotron or atomic pile, or found in a natural state.

Radiological, (Radiologic), *adj.*—Of or pertaining to Radiology.

Radiological Society of North America—RSNA. Office of the Secretary-Treasurer, 713 East Genesee Street, Syracuse 2, New York. Organized in Chicago, December 15, 1915.

Radiologic Survey—A physical survey of the disposition of materials and equipment, measurements or estimates of the levels of radiation that may be involved incident to the production or use of radioactive materials or other source of radiation under a specific set of conditions. This will include prediction of possible hazards and means suggested for correcting them. (cf. monitoring.)

Radiologist, *n.*—A physician who uses all forms of radiant energy (x rays, radium rays, and radioactive isotopes) in the diagnosis and treatment of disease. (cf. Roentgenologist).

Radiology, *n.*—The science which deals with the use of all forms of radiant energy in the diagnosis and treatment of disease. (cf. Roentgenology).

RADIOLOGY—A journal published monthly as the official organ of the Radiological Society of North America. Office of the editor: Henry Ford Hospital, Detroit 2, Michigan.

Radiolucency, *n.*—A descriptive term indicating permeability or impermeability of a part to x rays.

Radiolucency, Decreased—This term means a part is less permeable by x rays and hence has the same effect on film or fluoroscopic screen as increased density.

[1] Owen, Charles A.: Diagnostic Radioisotopes. Springfield, Illinois, 1959, Charles C Thomas.

Radiolucency, Increased—This term means a structure more permeable by x rays and hence has the same effect on the film or fluoroscopic screen as decreased density.

Radiolucent, *adj.*—Easily penetrable by x radiation; not radiopaque.

Radiopacity, *n.*—The degree to which a part is impermeable to x rays.

Radiopacity, Decreased—This term means more permeability by x rays and results in the same appearance on film or fluoroscopic screen as decreased density.

Radiopacity, Increased—This term means less permeability by x rays and results in the same appearance on the film or fluoroscopic screen as increased density.

Radiopaque, *adj.*—Impenetrable to the x ray or other forms of radiation.

Radiophosphorus, P^{32} (Sodium Radio-phosphate)—A radioisotope used in diagnosis for localization of brain tumors. In radiotherapy it is effective in polycythemia vera, chronic granulocytic leukemia and in chronic lymphatic leukemia.

Radiopotassium, K^{42}—A radioisotope used for brain tumor localization with some success.

Radioresistance, *n.*—Relative resistance of biologic tissues or substances to the injurious action of radiation.

Radioscopy, *n.*—Use of a fluoroscope energized by x radiations; fluoroscopy. Also roentgenoscopy.

Radiosensitivity, *n.*—Relative susceptibility of biologic tissues or substances to the action of radiation.

Radioulnar, *adj.*—Of or pertaining to the proximal and distal articulations of the radius and ulna.

Radium (Ra), *n.*—A naturally-occurring radioactive element used in the treatment of disease. It radiates alpha, beta, and gamma rays. Its atomic number is 88 and atomic weight 226.05.

Radium Applicator—A device for applying radium encased in tubes made of platinum, gold or other metal to neoplastic lesions as of the uterine cervix.

Radium Poisoning—Osteoradionecrosis, produced through long continued action of radium in the tissues.

Radium Implants—Seeds or needles containing radium or radon for interstitial radiation therapy. These may be left permanently in place, or can be removed after a calculated time.

Radius, *n.*—The lateral and larger of the two bones in the forearm.

Radon, *n.*—A gas emanating from radium with a half-life of just less than four days; it is measured in millicuries. It is element 86 and a natural isotope of the radioactive decay of radium from which gamma rays are emitted, and has a mass number 222.

Ramus, *pl.-i, n.*—A branch or process of a bone or vessel; as, ramus of pubic bone or mandible, and ramus of an artery.

Ranke Complex[1]—Dense, stable primary tuberculous complex consisting of calcified glands in the hilum and a densely calcified focus associated with it in the lung parenchyma. (cf. Ghon Focus.)

Raphe, *n.*—The ridge or furrow marking a line of union between two contiguous and similar paired structures.

Rapp's Position[2]—Patient seated crosswise on the radiographic table with the trunk in maximal flexion and the knees flexed over the edge of the table. The central ray is directed through the spine and sacrum. Used for delineation of the sacroiliac joints, the obturator sign in septic arthritis, and tuberculosis of the hip as well as supplementary views of the sigmoid colon. (See also Chassard-Lapine Position).

Rarefaction, *n.*—An area of decreased density, hence more radiable.

Rarefied Area—An area of lessened density.

Rarefying Osteitis—Chronic progressive disease of bone manifested by irregular areas of osteoporosis.

Rathke's Pouch Tumors—These are craniopharyngiomata or pituitary stalk tumors occasionally associated with Fröhlich's syndrome.

Ray, *pl.-s, n.*—An electromagnetic radiation propagated through the ether and originating from a source of radiant energy.

Raynaud's Disease—A vasomotor disturbance of the terminal blood vessels of the extremities, which may lead to gangrene.

Raynaud's Phenomenon—This is due to spasm of the digital arteries causing blanching and numbness of the fingers and occurring secondary to some other disease.

RBE (Relative Biological Effectiveness)[3]—Compares the effectiveness of absorbed dose of radiation delivered in different ways. It is commonly represented by the symbol N. It signifies that M rads delivered by a particular irradiation procedure produces a biological response identical with that produced by MN rads delivered by a different procedure.

Recessive Character—A term used in genetics where, of a pair of contrasted characteristics, one will not appear in the hybrid resulting

[1] Ranke, E.: Primare, Sekundare und Tertiare Tuberculose Des Menschen. *Munch. Med. Woch.*, *64*:305, 1917.
[2] Rapp, G. Position of value in studying pelvis and its contents. *Southern Med. J.*, *44*:95–99, 1951.
[3] Report of the International Commission on Radiological Units and Measurements (ICRU) 1956, *National Bureau of Standards Handbook, 62* (1957).

from crossing homozygous parents, dissimilar with respect to this characteristic.

Reciprocating Grid—A Bucky grid which moves throughout an x-ray exposure and which does not require pre-setting. (Also oscillating grid.)

Recoil (Compton) Electron—In a scattering type of collision, in the interaction of radiation and matter, when a photon displaces an electron from its orbit it gives up only a portion of its energy to it. The removed electron is called a Compton or recoil electron.

Recombination, *n.*—Following interaction of radiation and matter, reversion of an ionized atom or molecule to the neutral state.

Recovery, *n.*—A term used in radiation therapy to indicate return of the biological structure to normal following radiation damage.

Recovery Rate—This will vary with respect to different tissues and the amount of fractionation and protraction of the x-ray treatments. In general, advantage may be taken of the fact that neoplastic tissues have a slower recovery rate than normal surrounding structures.

Rectal, *adj.*—Of or pertaining to the rectum.

Rectifier, *n.*—An apparatus designed to change alternating current to a unidirectional one.

Rectify, *v.*—To change from an alternating to an unidirectional current either by mechanical rectifying apparatus or by valve tubes.

Rectifying Disc—A device for mechanical rectification of high voltage currents from alternating to unidirectional.

Rectocele, *n.*—Protrusion of the wall of the rectum into the perineum or vagina.

Rectosigmoid, *n.*—Those portions of the large bowel composed of the rectum and sigmoid.

Rectovaginal, *adj.*—Pertaining to rectum and vagina, as recto-vaginal fistula, a false opening between the rectum and vagina.

Rectovaginal Fistula—A pathological opening between the rectum and the vagina.

Rectovesical, *adj.*—Pertaining to the rectum and bladder; as, recto-vescial fistula, a false opening between the rectum and bladder.

Rectum, *n.*—The terminal pouch-like expansion of the large bowel.

Recumbent, Recumbency, *n.*—These terms mean that the patient is lying horizontally, either face up (supine) or face down (prone). Roentgenograms made with the patient lying in these positions will be therefore either AP or PA with respect to the x-ray tube.

Red Prussiate of Potash—(potassium ferricyanide) A red crystalline chemical used in the reduction of dense overexposed film.

Reduction, *n.*—The manipulative replacement in proper juxtaposition of fractured bones as: Reduction is complete.

Redundant, *adj.*—Recurring, reduplicated, or excessive, e.g., a redundant loop of bowel.

Reflux, *n.*— Any backward flow or regurgitation. Passage of barium through the ileocecal valve into the terminal ileum during a barium enema. Also passage of opaque medium into the ureters during cystography.

Regaud's Method[1]—Administering x radiation by using a low intensity (fractionated) beam protracted over a long period of time.

Regenerative Process—The recovery process by which damaged cells are ultimately replaced by new ones of the same type.

Regional Enteritis[2]—First described by Crohn and Ginzburg as a nonspecific granulomatous condition affecting principally the terminal ileum, cecum and ascending colon. It is characterized by relatively narrowed lumen and the so-called "string sign" where only a thin, stringy column of barium can be seen on the film. It is also characterized by "skip areas" and by areas of dilatation throughout the small bowel.

Registered Technician—A title signified by the letters R.T. certifying that the person has met the requirements and is registered with the American Society of X-Ray Technicians.

Registry of Bone Sarcoma—A classification kept in the Armed Forces Institute of Pathology in Washington of bone tumors reported from all over the United States.

Regurgitation, *n.*—The return flow of fluid in the direction opposite to normal flow; as regurgitation of food.

Reid's Base Line—A line from the lower margin of the orbit to the external auditory meatus (opening of the ear). (cf. cantho-meatal line and norma basalis.) This line is used in Radiography to mark the base of the cranium.

Reinfection Phase Tuberculosis—An acute exudative form of tuberculosis occurring in adults as distinguished from primary tuberculosis occurring principally in children.

Reiter's Syndrome—Remittent fever, lasting about seventeen days, joint pains, conjunctivitis, urethritis and enlarged spleen.

Relative Biological Effectiveness (RBE)[3]—Compares the effectiveness of absorbed dose of radiation delivered in different ways. It is commonly represented by the symbol N. It signifies that M rads delivered by a particular irradiation procedure produces a biological re-

[1] Regaud, C. and Ferroux, R.: Sur la diversite des reactions des tissus traites par les rayons x, en rapport avec le facteur temps, et sur la relativite de la dosimetre biologique dans la roentgen therapie de tumeurs malignes. *Arch. Inst. du Radium de l'univ. de Paris. 2:* 208, 1930.

[2] Crohn, B. B., Ginzburg, L., and Oppenheimer, S. D.: Regional enteritis. *J.A.M.A., 99:*1323, 1932.

[3] Report of the International Commission of Radiological Units and Measurements (ICRU) 1956. *National Bureau of Standards Handbook, 62* (1957).

sponse identical with that produced by MN rads delivered by a different procedure.

Relative Plateau Slope—The proportional increase in the number of counts as a function of the voltage expressed in percentage increased per 100 volts over the initial portion of the Geiger plateau.

Relativistic Mass—When a particle's velocity is increased, there is a slight increase in its mass which is, however, appreciable only at velocities approaching that of light (3×10^{10} cm./sec.).

Relay—A solonoid switch operated by the action of current flowing through it which forms an electromagnet attracting an iron plate to open or close a switch.

REM, *n.*—This is the roentgen equivalent man or that quantity of ionizing radiation which when absorbed by man produces an effect equivalent to the absorption by him of one roentgen of gamma or roentgen radiation. For x rays one REM is equivalent to one RAD and may be described as a "RAD EQUIVALENT MAN."

Remote Control Switch—A control switch which may be operated at a distance from the machine.

Renal, *adj.*—Pertaining to the kidney.

Renal Carbuncle—An abscess in the kidney.

Renal Excretion Rate (RER)[1]—The percent of excretion of a known dose of I^{131} per hour in thyroid function tests. It is calculated by the formula $69.3/t\frac{1}{2}$ = percent per hour where $t\frac{1}{2}$ is the number of hours required for the value at time zero to diminish by exactly half.

Renal Rickets—A form of rickets which occurs in children and is apparently caused by chronic nephritis with which it is invariably associated. This disease may also be thought of as secondary hyperparathyroidism or renal osteodystrophy. Also referred to as renal osteitis fibrosa cystica.

Renal Suppuration—Pus producing organisms in the kidney.

Renoduodenal, *adj.*—Of or pertaining to the kidney and duodenum.

REP, *n.*—(Obsolete). This is the roentgen equivalent physical or that quantity of ionizing radiation undergoing absorption in tissue or 83 ergs per gram.

Reproduction Factor—This is the same as the multiplication factor, i.e., in nuclear engineering, the number of neutrons produced for every neutron disappearing in a chain reaction system or atomic pile. If the factor is equal to one or greater, the chain reaction proceeds, but where the factor is less than one, the chain reaction cannot maintain itself.

RER—(Renal Excretion Rate)[1]—The per cent of excretion of a known dose of I^{131} per hour in thyroid function tests. It is calculated by the formula $69.3/t\frac{1}{2}$ = per cent per hour where $t\frac{1}{2}$ is the number of hours required for the value at time zero to diminish by exactly half.

Reset, *n.*—A push button or switch to return an overload switch to its normal operating position after it has been automatically shut off due to overload.

Residual Iodized Oil—Some opaque medium used in bronchography still visible in the alveoli of the lungs. May also be seen in the spinal canal or in subarachnoid spaces surrounding the brain following myelography.

Resistance, *n.*—A substance which offers an impediment to the flow of an electric current. Also relative insensitivity of some neoplasms to radiation therapy. A sensation imparted to the palpating hand by a tumor mass.

Resistor, *n.*—A length of nickel or similar alloy wire used for the purpose of impeding the flow of electricity causing it to spend its energy in the production of heat or light or both.

Resolving Time, Counter—In an electronic circuit, mechanical indicating device or a counter tube, minimum time interval elapsing between two distinct events which will permit both to be counted.

Resonance Capture—When a nucleus has a strong tendency to capture incident particles or photons of particular resonance energies, an inelastic nuclear collision occurs.

Resonance Energy—Any particular energy of a bombarding particle to which a given nucleus is exceptionally reactive and therefore has a maximum cross-section.

Respiration, *n.*—The physiologic function of breathing, common to all plants and animals, and consisting of an interchange of carbon dioxide, oxygen, and water.

Respiratory System—In all organisms especially adapted groups of cells and organs are developed for the exchange of oxygen and carbon dioxide. In mammals, this consists of nose, mouth, throat, trachea, bronchi, and the finer subdivisions of the lungs.

Respire, *v.*—The act of respiration, inhaling, and exhaling air successively.

Retain, *v.*—Ability to hold or contain.

Retention, *n.*—Referring to prolonged lodgment of opaque medium in a viscus such as the stomach or kidney. Also refers to urinary retention as in prostatic disease.

Reticular, *adj.*—Having the appearance of a network.

Reticuloendothelial System—This is found chiefly in the spleen, lymph glands, liver, lungs and bone marrow and consists of networks of phagocytic cells.

[1]Owen, Charles A.: Diagnostic Radioisotopes, Springfield, Illinois, 1959, Charles C Thomas.

Reticuloendotheliosis of Skull—Multiple or single areas of bone destruction with irregular margins but with no evidence of marginal sclerosis of the bone. This produces the so-called map-like configuration characteristic of the disease. (cf. Lipoid dyscrasias, eosinophilic granuloma.)

Reticulosis, *n.*—Increase, in monocytes histiocytes, or other reticuloendothelial elements.

Reticulum, *n.*—A net or rete.

Reticulum Cell Sarcoma—A form of malignant tumor characterized by reticulum cells, and belonging to the group of lymphomata.

Reticulum Cell Sarcoma of Bone—One of the lymphomata usually affecting the epiphyseal and metaphyseal areas of long tubular bone. Roentgenologically, there is an irregular pattern of involvement of the cortex and medullary portion of bone with practically no periosteal reaction.

Retro—*prefix*, meaning behind or backward.

Retrocaval, *adj.*—Behind the inferior or superior vena cava.

Retrocecal—Behind the cecum.

Retrograde, *adj.*—Back, or against the natural flow; as, retrograde pyelograms meaning pyelograms made after injection of opaque solution into the ureters through the bladder.

Retrograde Urography (Retrograde Pyelogram)—Examination of the urinary tract after introduction of contrast medium from below through catheters inserted into the ureters through a cystoscope.

Retro-Hypopharynx—Back of lower throat passage.

Retroileal, *adj.*—Behind the ileum.

Retroperitoneal, *adj.*—Behind the peritoneal cavity.

Retroperitoneal Gas—Characteristically a streaky gas pattern which may result from retroperitoneal injection of air by the presacral route or may result from direct trauma to the perineum via either the urethra or a direct penetrating wound. Rectal penetration and rupture of duodenum or colon may likewise cause similar shadows.

Retropharyngeal, *adj.*—Of or pertaining to the space behind the pharynx.

Retropharyngeal Abscess—Collection of pus in the retropharyngeal space.

Retropneumoperitoneum—Retroperitoneal injection of gas or air by the presacral route for outlining the renal and perirenal structures.

Retropulsion, *n.*—Backward displacement of a part such as intervertebral disc herniation.

Retrosternal, (Substernal), *adj.*—Behind the sternum.

Retrosternal Hernia—A diaphragmatic hernia posterior to the sternum and passing through the foramen of Morgagni. (cf. Parasternal hernia.)

Retrosternal (Substernal) Thyroid—An aberrant or ectopic position of the thyroid gland beneath the sternum.

Retzius' Space—The cavum Retzii or the preperitoneal space between the anterior abdominal wall and the peritoneum into which the urinary bladder may extend when distended.

Reversal, *adj.*—The reversal of a photographic image is the changing of the image so that the part most exposed shows least blackening and that having least exposure shows greatest degree of reaction.

Reverse Colles' Fracture—(Smith Fracture.) One showing posterior angulation at the fracture site and anterior dislocation of the distal fragment of the radius.

Reversible, *adj.*—Capable of being changed about in the opposite direction, i.e. a reversible reaction.

Rhabdomyoma, *n.*—A benign tumor composed of striated muscle fibers.

Rhabdomyosarcoma, *n.*—A malignant tumor including undifferentiated sarcomatous cells as well as those of striated muscle.

Rheostat, *n.*—A series of resistance coils conveniently arranged so that varying amounts of resistance can be introduced into the circuit.

Rhese Projection[1,2]—A roentgenographic position for examining the optic foramina in which the head is placed face down with the sagittal suture 50° from the vertical and the central ray directed 5° caudad through the orbit being examined.

Rheumatic, *adj.*—Of or pertaining to rheumatism or joint disease.

Rheumatic Valvular Disease.—Changes in the heart valves, especially the mitral and aortic valves by bacterial growths or vegetations upon them.

Rheumatism, *n.*—A disease of the joints.

Rheumatoid, *adj.*—Referring to a specific type of rheumatism or arthritis.

Rheumatoid Arthritis—A type of chronic relapsing arthritis believed to be metabolic or infectious in origin and affecting generally either the peripheral joints or the joints of the spine.

Rheumatoid Spondylitis[3]—Rheumatoid arthritis

[1] Rhese, Dr. (In Paderborn): Die chronischen Entzundungen der siebbeinzellen und der Keilbeinhohle mit besonderer Berucksichtigung ihrer bezienhungen zur allgemeinen medizin und ihrer diagnostik durch das röntgenverfahren. *Arch. f. Laryng. und Rhin.*, *24*:383–448, 1910–1911.

[2] Fuchs, A. W.: Optic foramina Ethmoidal sinuses, and orbits (Rhese). *Radiog. & Clin. Photog.*, *8*:6–15, 1932.

[3] Marie, P.: Sur la spondylose rhizomelique. *Rev. de med. 18*:285–345, 1898.

of the vertebral column. (Marie-Strümpell's type.)

Rhinencephalocele—Herniation of the brain with its coverings into the nasal cavity.

Rhinitis, *n.*—Inflammation of the mucous membrane lining the nasal cavity.

Rhinomucormycosis, *n.*[1]—A mycotic infection of the nose, paranasal sinuses, orbits and cranial structures usually caused by Rhizopus, a member of the phycomycetes group. (See also Mucormycosis)

Rhizomelic, *adj.*—A form of rheumatoid arthritis in which the "roots" of the extremities, such as the hips and the shoulders, are involved.

Rhizomelique, *adj.*—Concerning the hips and shoulders in man; the roots of the extremities, i.e. spondylitis rhizomelique.

Ribs, *n.*—Curved bones, twelve in number, on each side, forming the thoracic cage.

Rickets, *n.*—A nutritional disease of the bone affecting children under three years of age. Also Hypovitaminosis D.

Ridge, *n.*—An edge or border such as the petrous ridge of the temporal bone; the alveolar ridge.

Riedel's Lobe—An anomalous lobe of the liver extending as a tongue-like process from the lower margin of the liver, external to the gallbladder.

Right Angle X-Ray Tube—An x-ray tube in which the target is at right angles to the cathode; used for dental radiography.

Right Anterior Oblique—The RAO position with the right side closest to the film or screen, at a 45° angle.

Right Lateral—A position for x-ray examination with the right side closest to the film or screen, at a 90° angle.

Right Lateral Decubitus—A roentgenogram made with the patient lying on the right side with the film in front of him and the x rays directed from back to front producing a PA view.

Right Posterior Oblique (RPO)—A roentgenographic position with right side of the part posterior and nearest to the film at a 45° angle.

RIHSA (RISA)—Trade name (Abbott) for radioiodinated human serum albumin. Same as IHSA (Iodinated human serum albumin).

Rima, *n.*—A slit or narrowed opening between two parts, such as the rima palpebrarum; the fissure between the closed eyelids.

RISA (RIHSA)—Trade name of radio-iodinated (I^{131}) serum albumin,—human, Abbott. Same as IHSA (Iodinated human serum albumin).

Roentgen, (Röntgen), Wilhelm Conrad; Born: March 27, 1845, Died: February 10, 1923—The physicist who discovered x rays on November 8, 1895, in the Physical Institute of the University of Würzburg, Germany.[2]

Roentgen, *n.* (*small r*)—The primary unit of dosage of x rays; defined as that quantity of x or gamma energy which when the secondary electrons are fully utilized, and secondary radiation from the wall of the chamber is avoided, produces in one cubic centimeter of air at normal temperature and pressure such a degree of conductivity that the quantity of electricity measured at saturation current is one electrostatic unit of either sign.

Roentgendermatitis, *n.*—Chronic irritation of the skin from excessive exposure to x rays, either acute or chronic.

Roentgen Diagnosis—That part of the science of Roentgenology which uses Roentgen Rays (x rays) to make a diagnosis. (Diagnostic Roentgenology)

Roentgen Equivalent Man—REM[3]—is the unit of absorbed dose which takes into account the different relative biological effectiveness of different types of radiation (as alpha rays). For x rays, one rem is equivalent to one rad and may be thought of as a "Rad Equivalent Man."

Roentgen Equivalent Physical—REP (Obsolete.) Radiation exposures of any kind resulting in ionization equivalent to 83 ergs per gram of air or 93 ergs per gram of tissue.

Roentgen Per Hour at One Meter—(Rhm). This is a convenient unit of radiation which takes account of the intensity of the radiation measured.

Roentgenogram, *n.*—A film transparency recording in its emulsion varying densities of a body traversed by x rays.

Roentgenographic, *adj.*—Of or pertaining to a roentgenogram or roentgenography.

Roentgenography, *n.*—Use of x rays in making x-ray films of a part. (cf. Radiography.)

Roentgenologist, *n.*—A physician who limits his work to the use of x rays in the diagnosis and treatment of a disease after following a prescribed course of instruction in the specialty. (cf. Radiologist).

Roentgenology, *n.*—The science which deals with the use of x rays in examination and treatment of disease. (cf. Radiology).

Roentgenoscopy, *n.*—The examination of a patient or object by direct visualization of shadows cast on a roentgenoscope, fluoroscope or fluoroscent screen by a beam of roentgen rays. Also, radioscopy.

Roentgen Rays—X rays.

[1] Smith, Yanagisawa: Rhinomucormycosis. *New Eng. Jour. of Medicine, 20:*1007, May 14, 1959.

[2] Etter, L. E.: Post-war visit to Roentgen's Laboratory. *Am. J. Roentgenol. & Rad. Ther., 54:*547, 1945.

[3] See: A Practical Manual on the Medical and Dental use of X rays with Control of Radiation Hazards. Prepared by the American College of Radiology, 20 North Wacker Drive, Chicago 6, Ill.

Roentgen Therapy—The use of x rays of various qualities for treatment of many malignant neoplasms, and also for certain non-malignant diseases.

Roentgen Ulcer—Radiation ulcer from overexposure to x rays.

Rokitansky-Aschoff Sinuses[1]—Congenital spaces seen around the gallbladder in cholecystography and usually associated with chronic inflammatory disease. (Diverticulosis of the gallbladder.)

Röntgen, (Roentgen), Wilhelm Conrad[2]; Born: March 27, 1845, Died: February 10, 1923. The physicist who discovered x rays on November 8, 1895, in the Physical Institute of the University of Würzburg, Germany.

Roof, *n.*—The cover or top of a cavity, i.e., roof of the mouth.

Root Canals—The pulp canal or vascular tissue in the center of a tooth.

Root Granuloma—Chronic inflammatory tissue surrounding the apex or root of a tooth.

Root Mean Square Kilovoltage—The average effective kilovoltage of an alternating current wave.

Root of Lung—An old term referring to the hilum of the lung. The portion of the lungs in apposition to the mediastinum.

Rosary, Rachitic—Knobby enlargements of the costochondral junctions seen in hypovitaminosis D. (See also Rickets.)

Rose Bengal, Radioiodinated (I^{131} Rose Bengal)[3]—Used as a test of hepatic function depending upon pattern of uptake of I^{131} by the liver.

Rotalix Tube—An x-ray tube in which the target continually rotates while the tube is activated.

Rotary-Converter, *n.*—A motor generator set, which when operated by one type of current produces another; for example, the conversion of alternating to direct current.

Rotate, *v.*—To turn on a central axis.

Rotated, *adj.*—A part which is turned to a certain degree of obliquity for a particular type of x-ray examination.

Rotating Anode Tube—An x-ray tube in which the target area constantly rotates during exposures, thus preventing overheating and permitting use of higher energy.

Rotating Target—A target which revolves during operation of an x-ray tube.

Rotation, *n.*—Regularly recurring sequence of events or movement of the patient or part into a particular position with reference to the x-ray tube and film. Also spoken of embryological development as incomplete rotation or non-rotation with respect to an organ such as the kidney.

Rotation Therapy—A form of radiation therapy in which either the patient is turned around a central axis with the x-ray beam constant, or the source of radiation is revolved about the patient.

Rotundum, *n.*—Foramen in sphenoid bone for passage of the maxillary nerve.

Routine, *adj.*—An examination done without special indication as, for example, a routine film of the chest in a survey.

-rrhaphy—*suffix,* meaning suture or repair.

-rrhexis—*suffix,* meaning rupture of.

R.S.N.A.—Radiological Society of North America, organized in Chicago, Illinois, December 15 and 16, 1915. Office of the Secretary-Treasurer: 713 East Genesee Street, Syracuse 2, New York.

R.T.—The letters signifying registered x-ray technician or one certified by and registered with the American Society of X-ray Technicians.

Rudiment, *n.*—An organ or structure in its early stages of development.

Rudimentary—A part arrested in its development, i.e. rudimentary rib.

Ruga, *pl. -ae, n.*—A ridge or fold of mucous membrane lining the stomach.

Rugar, *n.*—A proprietary preparation adhering very closely to mucous membrane better to delineate folds of the esophagus and stomach.

R-Unit of Roentgen Rays—The unit of x-ray dosage; see roentgen or r.

Rupture, *n.*—A hernia as in the inguinal, femoral, or umbilical regions; a break in a hollow viscus with release of gas and other content into the peritoneal cavity.

Rupture of Hollow Viscus—Release of gas or other content into the peritoneal or retroperitoneal cavity.

Ruptured Disc—Evidence of posterior displacement or separation of intervertebral disc and nucleus pulposus.

Rush Intramedullary Nail—Used in orthopedics for fixation of fractures of the tibia. (See chart on p. 109.)

Rutherford, *n.* (*rd.*)—The amount of any radioactive substance needed to supply 10^6 disintegrations per second. E. Rutherford, an English physicist who pioneered in experimental work on atomic structure, radioactivity, and x rays.

[1] Aschoff, L.: Bemerkungen zur pathologischen Anatomie der Cholelithiasis und Cholecystitis. *Verhandl. d. deutschen pathol. Gesellschaft. 41:* 1905.
Rokitansky, C. *A Manual of Pathological Anatomy.* Philadelphia, 1885, Blanchard & Lea, ii, 130.
Halpert, Bela. Morphological studies on the gallbladder. II. The "True Luschka Ducts" and the "Rokitansky-Aschoff Sinuses" of the human gallbladder. *Bull. Johns Hopkins Hosp., 41:*77–103, 1937.

[2] Glasser, Otto: *Röntgen, Wilhelm Conrad and the Early History of the Roentgen Rays,* Springfield, Illinois, 1934, Charles C Thomas.

[3] Owen, Charles A.: Diagnostic Radioisotopes. Springfield, Illinois, 1959, Charles C Thomas.

S

Saber Shin—An anteriorly convex, sharp-edged ridge on the tibia seen in hereditary syphilis.

Saccular, *adj.*—Like a small sac or bag; one of the sacs of the vestibular membrane of the ear, the other being the utricle.

Sacral, *adj.*—Of or pertaining to the sacrum.

Sacralization, *n.*—Enlargement of the transverse processes of the fifth lumbar vertebra which may be fused with the sacrum; or a sixth lumbar vertebra, transitional in type, which is almost completely fused with the sacrum.

Sacral Vertebrae—Five vertebral segments fused into one and forming the sacrum, a wedge-shaped bone at the center of the pelvis. (See also Assimilation Sacrum.)

Sacrococcygeal, *adj.*—Pertaining to segments of the vertebrae of the sacrum and coccyx.

Sacroiliac Joint—The joint between the sacrum and iliac bone on either side.

Sacroiliac Strain—Strain of the ligaments of the sacroiliac joint.

Sacrosciatic Notch—The notch formed between the margins of the sacrum and the ilium on the lower margin of the pelvis.

Sacrum, *n.*—The wedge-shaped bone at the lower end of the spine which forms a keystone for the arch of the pelvic bones.

Safe-Light, *n.*—A light for a dark room with which regular x-ray films can be safely handled without fog. Moving picture film must be developed in complete darkness.

Sagittal—Arrowlike; in an anteroposterior direction in the midline.

Sagittal Plane—A plane which divides the body in the midline into the right and left sides.

Sagittal Sinus—The large venous sinus in the dura beneath the sagittal suture of the skull.

Sagittal Suture—The suture or union of the bones of the skull which runs over the top of the head in the midline from before backwards.

Saliva, *n.*—The secretion found in the mouth which aids in mastication and digestion of food.

Salivary, *adj.*—Of or pertaining to the salivary glands.

Salivary Calculi—Concretions found usually in the ducts of the salivary glands as in Stensen's or Wharton's duct. These are frequently demonstrable on axial or oblique lateral views of the skull and jaws.

Salivary Glands—Glands located near the mouth which secrete saliva.

Salpingogram, *n.*—Radiographic visualization of the Fallopian tubes by injection of radiopaque material.

Salpingouterogram, *n.*—Radiographic visualization of the uterus and Fallopian tubes by injection of radiopaque contrast media.

Sanchez-Perez Automatic Film Changer—A rapid cassette changer coordinated with the timing mechanism of an x-ray circuit so that serialographic exposures can be made of a part, such as the brain following opacification of the blood vessels.

Santorini, Duct of—The upper and smaller of the pancreatic ducts opening into the duodenum about 2 cm. above the ampulla of Vater.

Sarcoid, *n.*[1]—A peculiar chronic disease of unknown origin which affects the bones, lung, skin and other tissues of the body. Usually spoken of as Boeck's sarcoid.

Sarcoidosis—A chronic infectious disease of unknown cause marked by granulomatous lesions in the skin, lymph nodes, salivary glands, eyes, lungs and bones.

Sarcoma, *n.*—A malignant new growth of connective tissue origin which may also affect bone.

Saturation Current—The maximum current in an x-ray tube which fully utilizes all electrons which are available at the cathode for the production of x rays.

Saw Tooth—A configuration of the walls of the large bowel seen in diverticulitis. Also, serrated outline.

Scalene, *n.*—A group of muscles extending from the cervical vertebrae to the first and second ribs.

Scalene Node—One of a group of lymphatic glands situated adjacent to the scalene muscles.

Scalene Node Biopsy—Excision of a lymphatic gland from the anterior cervical chain especially for diagnosis of intrathoracic disease.

Scalenus Anticus Syndrome—A painful tension on the anterior scalene muscles by a cervical rib may cause painful shoulder and arm, cyanosis and a swelling of fingers and eventually atrophy of the deltoid muscles and those of the thenar eminence of the hand.

Scaler, *n.*—An electronic apparatus devised so that an output voltage pulse is produced whenever a certain number of input pulses have been received.

Scalloping, *n.*—Regularly rounded contours of the dome of the diaphragm caused by pull of its digitations.

[1] Boeck, Caesar Peter Moeller, Multipelt Benignt Hud-sarcoid, *Norsk., Mag. f. Laegevidensk 4R 14*:1321–34, 1899, and *J. Cutan. & Gen. Urin. Dis., 17*:543–550, 1899.

Scanning Tube—An electronic tube used in television and for amplification of the fluoroscopic image.

Scanogram Technique—Designed for measuring the length of a bone, particularly of the femur, by means of markers placed upon a measuring tape so that they may be seen on the radiograph.

Scaphocephaly, *n.*—A long or boat-shaped skull.

Scaphoid, *n.*—(Tarsal or carpal navicular.) Boat-shaped; one of the tarsal or carpal bones.

Scapula, *n.*—The "shoulder blade" articulates with the humerus and clavicle.

Scar Tissue—Organized fibrous tissue resulting from injury, inflammation or tumor.

Scatoma, *n.*—A fecal tumor; collection of inspissated feces having the appearance of a tumor in the colon or rectum.

Scattered Radiation—A term used in radiology which refers to secondary radiation produced as radiation is deviated in direction causing a modification resulting in an increase in wavelength.

Scattering, *n.*—Of three varieties, namely, forward, backward, and side scatter with reference to the change of direction which a subatomic particle or photon undergoes as a result of a collision or interaction with matter.

Schatzki Ring[1]—The lower esophageal ring. Named for a Boston radiologist, Dr. Richard Schatzki.

Scheurmann's Disease[2,3]—Necrosis of the epiphyses of the vertebrae; osteochondrosis of the vertebrae. Osteochondritis of the secondary centers of ossification of the vertebrae. (cf. Calvés vertebra plana.)

Schistosomiasis, *n.*—Infestation with the genus of trematode worms or Bilharzia.

Schmincke Tumors—Named for the German pathologist Alexander Schmincke. These are malignant lympho-epitheliomata involving the lingual, faucial and pharyngeal tonsils which are lympho-epithelial organs. These tumors are also termed transitional cell carcinomata. They frequently erode the base of the skull.

Schmorl's Disease—Herniation of the nucleus pulposus of an intervertebral disc into an adjoining vertebral body.

Schmorl's Nodes[4]—A nodule, sometimes calcified, seen in roentgenograms of the spine, due to prolapse of a nucleus pulposus into an adjoining vertebra.

Schonander Rapid Biplane Film Changer—An apparatus of Swedish manufacture designed to produce radiographs in two planes simultaneously, as rapidly as six per second.

Schüller-Christian's Disease[5]—One of the reticuloendothelioses, a disease of lipid metabolism causing areas of destruction in the flat bones of the skull and lipid deposition in other tissues. (See also Hand-Schüller-Christian's Disease.)

Schwannoma, *n.*[6]—Encapsulated, soft, often cystic tumor, resembling meningioma, also called neurilemmoma and neurinoma. (cf. Psammoma).

Sciatic, *n.*—The largest nerve of the lower leg and derived from the lumbosacral plexus.

Scintigram, *n.*—A graphic recording on paper of pulses derived from radioactivity of isotopes in an object or organism.

Scintillation, *n.*—Minute flashes of light observed on a fluorescent screen as a result of spontaneous emission of alpha particles across its surface.

Scintillation Counter—An apparatus combining a phosphor, photomultiplier tube and associated circuits for the purpose of counting light emissions caused by ionizing radiation acting on the phosphor.

Scintiscanner, *n.*—An apparatus using a scintillation counter and designed to map out the distribution of radioactivity in an organism.

Scleroderma, *n.*—One of the collagen diseases manifested by hardening and loss of elasticity of the skin and of the gastrointestinal tract.

Sclerosing Osteomyelitis of Garré—A low grade chronic infection of bone producing marked increase in density.

Sclerosing Otitis—Inflammation of the ear, marked by hardening of the ear structures.

Sclerosis, *n.*—Hardening of tissues, usually of the interstitial tissue or bone.

Sclerotic, *adj.*—Pertaining to or affected with sclerosis. Hard.

Scoliosis, *n.*—Lateral curvature of the spine. Compensatory scoliosis in which there is usually a curve in an adjoining segment of the spine in the opposite direction.

Scotoma, *n.*—A blind spot of varying size and shape in the visual field.

Scout Film—A preliminary or survey film of the abdomen prior to administration of opaque

[1] Schatzki, Richard and Gary, J. E.: Dysphagia due to a diaphragm-like localized narrowing in the lower esophagus "lower esophageal ring." *Am. J. Roentgenol. & Rad. Ther., 70*:911–22, Dec. 1953.

[2] Scheurmann, H.: (*Ztschr. f. Orthop. Chir.*), 1921, 41, 4. And *Amer. J. Roentgenol., XIVII*:659, Feb., 1938.

[3] Scheurmann, H.: Scheuermann's Krankheit (Kyphosis Juvenilis), *Fortschr. a. d. Geb. Röntgenstrahlen, 53*:1–16, 1936.

[4] Schmorl, G. and Junghann's, H.: Die gesunde u kranke wirbelsaule im roentgen bild. Thieme, Leipzig, 1932.

[5] Schüller, A.: *Fort. a.d.G.d. Ront.*, 1915, 16, Bd.23 & *Am. J. Roentgenol., 16*:336, 1926.
Christian's Syndrome, Editorial, *Am. J. Roentgenol., 22*:263. 1929.

[6] Wood, Ernest, H., Jr.: The diagnosis of spinal meningiomas and schwannomas by myelography, *61*: 683, 1949.

media. See also plain film, survey radiograph or KUB. The term "flat plate" is obsolete.

Screen, *n.*—A term applied to both a fluoroscopic screen or an intensifying screen. In the case of the former, a thin sheet of radiolucent material is coated with calcium tungstate crystals and mounted beneath a sheet of lead protective glass. An x-ray beam directed through a patient placed behind this screen produces light and shadows on the fluorescent screen by fluorescence of the crystal coating. In the case of the latter, the fluorescent screens are mounted in the front and back of a cassette and intensify the effect of x rays on the film by giving off visible light, thus requiring less radiation.

Scrofula, *n.*—A granular swelling, usually tuberculous in nature, and in medieval times referred to as "the King's Evil."

Scrotum, *n.*—The sac containing the male gonads or testes.

Scurvy, *n.*—A nutritional disease of bone occurring usually in young infants from vitamin C deficiency in the diet. Also Barlow's Disease and hypovitaminosis C.

Sebaceous Adenomas—Benign tumors of the sebaceous glands.

Sebaceous Cyst—A benign tumor formed by a collection of sebaceous material in a gland whose orifice is obstructed.

Sebaceous Glands—Glands secreting oily material for the skin and hair.

Secondary Circuit, or Winding, of a Transformer—The winding about the iron core, outside the primary winding, in which a secondary current is induced.

Secondary electrons—These are photoelectrons or recoil (Compton) electrons formed when x rays or fast particles remove them from the orbits of atomic structures.

Secondary Radiation—That which originates as the result of scatter in the process of absorption during interaction of radiation and matter, and may be either electromagnetic or particulate in nature.

Secrete, *v.*—To separate a liquid from the blood by glandular action.

Secretion, *n.*—A substance separated from the blood by glandular action, of two types: Internal and External. Example of internal secretion is insulin; of external secretion, saliva.

Segment, *n.*—A subdivision of a lobe of the lung, intestine, blood vessel, etc.

Segmental, *adj.*—Of or pertaining to a segment or subdivision of a lobe of the lung or other part.

Segmental Resection—Operative removal of a segment of the lung.

Segmentation, *n.*—Breaking up into segments, as seen in the small bowel in regional enteritis.

Selective Localization—Refers to accumulation of a particular isotope to a significantly greater degree in some cells or tissues than in others.

Self-Absorption—Absorption of radiation within a sample being assayed.

Sella Turcica (Turkish Saddle)—The saddle-like bone structure at the base of the skull, in the sphenoid bone, which holds the pituitary gland.

Sella Turcica Clinoids—Processes from the anterior and posterior parts of the sella turcica.

Semi—*prefix*, meaning half.

Semicircular Canals—Three small half circular canals of the inner ear which have to do with maintenance of equilibrium.

Semierect, *adj.*—Inclined as on a radiographic table, between 90° and 45° to study mobility of kidneys and other structures. (See also Semirecumbent.)

Semilunar, *adj.*—Half moon-shaped.

Semilunar Cartilage—The medial or lateral meniscus in the knee joint.

Semilunar Notch—Notch in scapula for passage of the suprascapular nerve.

Seminal, *adj.*—Of or relationg to semen, or to the seminal vesicle.

Seminal Vesicles—Receptacles for semen on each side beneath the bladder of the male which empty into the posterior urethra.

Seminal Vesiculography—Accomplished by injection of opacifying medium to study the appearance of the seminal vesicles and the connecting vas deferens especially in relation to carcinoma of the prostate gland.

Semirecumbent, *n.*—This is a position for roentgenography that is the same as semierect with the table on which the patient is resting angled between 90° and 45° for the purpose of showing mobility of kidneys and other structures, and the presence of gas and fluid levels.

Senescence, *n.*—The process of growing old, or the period of old age.

Senile, *adj.*—Aged or senescent.

Sensitive Volume—A specially designed portion of a counter tube ionization chamber responding to specific quality of radiation.

Separation Factor—Same as enrichment factor. That is, to produce 90 per cent U235 from natural uranium (of which 1/140 is U235), the over-all enrichment factor of the process may be 90/10 divided by 1/139 or about 1,260.

Septal, *adj.*—Of or pertaining to a septum.

Septic, *adj.*—Of or pertaining to sepsis or the presence of various pus-producing, pathogenic organisms or their toxins in tissues.

Septic Bronchopneumonia—A severe form of

bronchopneumonia caused by virulent pus-producing organisms.

Septic Temperature—One having marked and wide diurnal and nocturnal variations and associated with septicemia.

Septicemia, *n.*—Generalized disease caused by toxins of pathogenic organisms in the blood stream.

Septum, *pl.* **-a,** *n.*—A membranous partition of the lung; nasal septum, the partition of the nose.

Septum Pellucidum—The translucent membrane between the medial walls of the lateral ventricles.

Sequela, *pl.* **-e,**—A condition following or resulting from a disease.

Sequestrate, *v.*—To isolate or separate.

Sequestration, Pulmonary—Separation of a segment or several segments of the lung from normal connection with the rest of the bronchial tree. In an extralobar type, an accessory lobe is formed which is enclosed within its own pleural sheath with a hilus attached to the parietes. This tissue may be undifferentiated or it may undergo cystic and cavitary change.

Sequestrum, *pl.* **-a,** *n.*—A piece of necrosed bone separated from surrounding tissue.

Serendipity, *n.*—A talent for accidentally discovering something valuable or agreeable; to discover by chance or by sagacity, things not specifically sought.

Serial Films—Ones taken as a series of exposures to record progressive events as in opacification studies of the hollow viscera, and especially in angiography. This term may also refer to 30 and 60 minute interval films made for small bowel studies.

Serialogram, *n.*—An arrangement using a lead blocking device for making multiple exposures of a part on a single film. Commonly used to show multiple views of the duodenal bulb.

Serous, *adj.*—Of or pertaining to serum.

Serous Fluid—Clear watery fluid secreted by serous membranes of the body; such as, the pleural cavity and peritoneal lining of the abdomen.

Serrations—Formation with sharp projections like the teeth of a saw. Resembling notches between teeth of a saw, as seen in diverticulitis of the large bowel.

Sesamoid Bone—A bone formed in a tendon; a small flat bone developed in a tendon which moves over a body surface.

Sessile, *adj.*—Having no peduncle but attached directly by a broad base.

Sever's Disease—Osteochondritis of the apophysis of the heel bone, or os calcis. (Calcaneus.)

Sex Linkage—Determination of certain characteristics in heredity which are determined by the genes located on sex chromosomes.

Shadows, *pl.*, *n.*—The record of varying densities of a part shown on the roentgenogram.

Shaft, *n.*—The diaphysis or long portion of a bone.

Sharply Marginated—A structure or lesion having a definite, clearly outlined border with no tendency to merge with its surroundings.

Sharpness of Border—Clearly outlined, marginated or delimited from contiguous structures.

Sheath, *n.*—A covering or investment as the sheath of a tendon.

Shenton's Line—The curved line representing the relationship between the under surface of the neck of the femur and upper margin of the obturator foramen.

Sherman Plate—A four-screw bone plate used for fixation of fractures in orthopedic surgery. (See chart on p. 108.)

Shielding, *n.*—A dense substance such as lead foil or lead rubber to protect the normal area surrounding a lesion under radiation treatment. Lead glass, lead rubber aprons and walls of concrete to shield from radiation sources.

Shin, *n.*—The anterior margin or surface of the tibia.

Shock-Proof Tube—A modern type of x-ray tube which is completely encased in a grounded metal conductor.

Short Bones—Metacarpal, metatarsal and phalangeal bones of the hands and feet.

Short Esophagus—A congenital variation usually associated with hiatus hernia.

Shoulder Girdle—Anatomical grouping comprising the clavicle, proximal end of the humerus, the scapula, and the associated joints.

Shoulder Joint—The area between the head of the humerus and the glenoid fossa of the scapula.

Shutter, *n.*—Lead shields operated as a variable diaphragm to collimate a beam of x rays emerging from a fluoroscopic tube.

Sialogram, *n.*—Roentgenographic visualization of the salivary ducts and glands by injection of opaque medium. (Sialography.)

Sialography, *n.*[1]—Roentgenographic examination of opacified salivary glands and ducts.

Sickle Cell Anemia—A form of anemia usually found in the Negro race presenting characteristic radiologic findings in the skull where there is distending of the outer table and spicules of bone, like hair "standing on end" radiating outward. (See also Cooley's anemia.)

[1] Holt, John F.: Sialography (Edit.) *Radiology, 65*:4, April 1957.

Sicklemia, *n.*—A mild form of sickle cell anemia.

Sideropenic Anemia—Iron deficiency anemia.

Sideropenic Dysphagia—Difficulty in swallowing associated with iron deficiency anemia. (See Plummer-Vinson syndrome.)

Siderosis, *n.*—A disease of the lungs occurring with prolonged inhalation of fine particles of iron (hemosiderosis) or in long standing mitral stenosis.

Sieve Plate (Grid) Irradiation[1]—Radiation treatment of advanced cancer through a waffle type of grid to permit larger doses.

Sigma, *n.*—The Greek letter Σ and a symbol for the following, (1) A millisecond 0.001 sec.); thus "1 Σ" should be read "one millisecond," (2) The coefficient of scattering, (3) The standard deviation (statistical measure of dispersion).

Sigmoid, *n.*—The "S" shaped portion of the descending colon as it crosses the pelvic brim and joins the rectosigmoid and rectum.

Sigmoid Curve—In radiobiology, an S-shaped curve representing a characteristic dose-effect curve.

Sigmoid Sinus—The curving portion of the lateral sinus on posterior portion of the petrous and medial aspects of the occipital bone.

Silhouette, *n.*—A representation of the outlines of an object filled in with some uniform color, projected upon a background.

Silhouette Sign[2]—In a PA film of the chest the heart or ascending aorta border is obliterated by anterior lesions whether pulmonary, mediastinal or pleural, but present in posterior lesions.

Silicosis, *n.*—A disease of the lungs from prolonged inhalation of fine dust particles of silica. (cf. Pneumoconiosis.)

Silicotic, *adj.*—Of or pertaining to silicosis.

Silo Fillers' Disease—A disease of the lungs thought to be due to inhalation of the products of fermentation of silage. (cf. Farmer's Lung.)

Simmonds' Syndrome—This is a disease believed due to pituitary cachexia producing premature senility and considerable emaciation. There are premature senile changes in the skeleton and the entire body. It may produce pituitary dwarfism in children.

Simple Fracture—Having no complicating features; a fracture not connected with the outside air.

Simultaneous Multisection Laminagraphy Use of a "book" of screens with films, and Bucky diaphragm, to obtain several laminae or sections of a part with a single sweep of the tube.

[1] Marks, H.: Irradiation of advanced cancer through a grid. *Am. J. Roentgenol. & Rad. Ther.*, *66*:823, 1951.

[2] Felson, Henry: Localization of intrathoracic lesions by means of the posterior-anterior roentgenogram. The Silhouette Sign. *Radiology*, *55*:363, 1950.

Sincipital, *adj.*—Of or pertaining to the forehead and upper half of the cranium. (cf. occipital.)

Sinciput, *n.*—The upper half of the skull, more especially the anterior portion including the forehead. (cf. occiput.)

Sinding-Larsen's Disease—Osteochondritis of secondary epiphyseal center of the patella.

Sine Curve of an Alternating Current—The wave form of an alternating current, characterized by a rise from zero to maximum positive potential, then descending to zero to its maximum negative value and then rising to its maximum positive potential to fall again to zero.

Sinister, *n.*—On the left side. (O.S. means oculus sinister, the left eye). (cf. dexter.)

Sinoauricular Node—The site in the heart at the junction of the vena cava and auricle where the pacemaker of the heart is situated.

Sinobronchitis—Bronchitis in association with chronic infection of the paranasal sinuses.

Sinus, *n.*—A natural cavity in bone containing air, such as, the paranasal sinuses; a tract in the soft parts offering a pathway for discharge of deep-seated infectious material. A large blood vessel, as the lateral sinus, emptying into the sigmoid sinus situated on the inner edge of the occipital and temporal bones.

Sinus Pericranii—In this condition there is a palpable and readily compressible mass in the scalp which changes with increased blood supply and is believed to represent an abnormal communication of an emissary vein with a large intracranial vessel communicating through an abnormal foramen in the skull.

Sinus of Valsalva—The aortic sinus, or the space between each semilunar valve and the wall of the aorta.

Sinusitis, *n.*—Inflammation of the paranasal sinuses.

Site, *n.*—The position of a structure or abnormality.

Situs Viscera Inversus—A congenital developmental anomaly in which the principal organs are transposed with respect to the right and left sides. (cf. dextrocardia.)

Six-Hour Barium Meal—A meal containing barium sulphate used to test the motility of the gastrointestinal tract.

Skeletal System—Bony structure of the body.

Skeleton, *n.*—The bony framework of vertebrates.

Skiabaryt, *n.*—A proprietary preparation for the opacification of the rectum and colon.

Skiagraph, (Shadowgraph), *n.*—An old term used to indicate a roentgenogram. (Obsolete.)

Skiagrapher, *n.*—One who made and studied the early x-ray plates or shadowgraphs. (Obsolete.)

Skiagraphy, *n.*—The early name designating the science of making shadow pictures. (Radiography.)

Skin Dose—The dose of radiation measured on the skin, either in diagnosis or therapy, and representing the sum of the air dose and backscatter, measured at the center of the radiation field.

Skin Reaction—Reddening or erythema of the skin in response to radiation, usually appearing seven to ten days after exposure.

Skinner's Line—A horizontal line is drawn from the top of the greater trochanter of the femur as seen in the AP view to the top of the obturator foramen of the pelvis in a question of fracture through the neck of the femur. A perpendicular is dropped through the axis of the shaft of the femur to this line. In fractures, with shortening of the femur, the greater trochanter will be displaced above this line.

Skiodan, *n.*—A proprietary drug used in urography for both intravenous and retrograde methods.

Skip Areas[1]—Segments of the small bowel which are markedly contracted and thus not filled with barium, seen in regional enteritis, and alternating with areas of relative dilatation producing a rather characteristic pattern of this disease. (See also Crohn's Disease and Regional Enteritis.)

Skull, *n.*—Composed of a visceral and facial portion, the former providing a protective covering for the brain, cranial nerves and the proximal portion of the spinal cord; the latter comprising the facial bones and soft tissues of the face.

Slipped Femoral Epiphysis—A disease affecting the epiphysis of the head of the femur permitting it to slip.

Slug, *n.*—A term referring to the fuel unit of a natural uranium-graphite reactor, having a bar-shape and especially prepared for insertion into the nuclear reactor.

Smith Fracture—A reverse Colles' fracture of the radius.

Smith-Peterson Nail—A metallic nail used for fixation or pinning of a fractured neck of the femur. (See chart on p. 108.)

Smith-Peterson Nail with McLaughlin Bar—Combination of a plate and nail for fixation in fractures of the head and neck of the femur. (See chart on p. 108.)

Smith-Peterson Vitallium Cup—An orthopedic appliance designed to replace the head of the femur. (See chart on p. 108.)

Sodium Iodide—A chemical compound used in solution for cystography and retrograde pyelography.

[1] Crohn, B. B., Ginzburg, L., and Oppenheimer, S. D.: Regional enteritis, *J.A.M.A.*, *99*:1323, 1932.

Soft, *adj.*—A term applied to x radiation of long wave length, having feeble penetration. Opposite of "hard" x rays.

"Soft" Radiation—Long wave length x rays of low penetrability found as components of relatively low KV (40–80) x-ray beams. (cf. "Hard" radiation).

Soft Tissue Shadows—The record of density of soft tissue as compared with bone shown on the roentgenogram. Breast shadows are shown contrasted against the air in the lungs around them.

Solarization, *n.*[2]—A method of making an exact duplicate of a roentgenogram by exposing the original with an unexposed film under it to sunlight, processing in light when reversal of the image will occur, but finally producing the same lights and shadows as the original film. This process may also be accomplished artificially by using the light from a radiographic viewbox, in which case the unexposed film is superimposed upon the one to be duplicated.

Solenoid, *n.*—A coil of nickel or copper wire wound about an iron core which may be moved in and out of it to produce a variable resistance.

Solenoid Switch—One constructed with a solenoid so that it may be opened or closed through the magnetic action of electric current.

Somatic, *adj.*—Pertaining to all parts of the body, with the exception of reproductive cells.

Somatic Cells—The cells of the body, as distinguished from those of the germ cells, and usually having two sets of chromosomes.

Spalding Sign[3]—The Horner-Spalding sign of overlapping skull bones as a sign of fetal death.

Spallation, *n.*—The "chipping" of fragments off the target nucleus, during a nuclear reaction produced by high-energy bombardment.

Spark Coil—Induction coil.

Spark Gap—A variable gap between points or spheres attached across a high voltage circuit to measure the approximate voltage.

Spasm, *n.*—Involuntary continuous contraction of a muscle.

Spastic, *n.*—Resembling or of the nature of spasms or convulsions.

Spatial, *n.*—Pertaining to space.

Spatial Relation—Depth perspective.

Special, *adj.*—Referring to a particular kind of auxiliary examination.

Specific Activity, Gram Element—The total

[2] Carabello, N. C.: Direct duplication of roentgenograms by artificial solarization, *Bull. U. S. Army Med. Dept.*, *IV*:6, 728–729, Dec. 1945.

[3] Spalding, A. B.: A pathognomonic sign of intrauterine death. *Surg. Gyne. Obst.*, *34*:754–757. 1922.

radioactivity of an isotope measured per gram of the element.

Specific Activity, Isotope—The total radioactivity of an isotope measured per gram of the radioactive isotope.

Specific Ionization—Number of ion pairs per cm. of path of an ionizing particle.

Spectograph, *n.*—An instrument used in making a photographic impression of the spectrum.

Spectrum, *n.*—The result of dispersion of waves of radiation of different wave length, for both light and x rays.

Spectrum Analysis—Analysis of a substance by observing the interference phenomena which it exhibits in the spectrum.

Speed, *n.*—Of an x-ray film, refers to its degree of sensitivity to x rays, as compared with other films exposed to the same amount of radiation.

Sperm, *n.*—Spermatozoa, or the male gametes, carried in the seminal fluid.

Sphenoid, *adj.*—Wedge-shaped; particularly the sphenoid bone which is the keystone structure of the cerebral cranium.

Sphenoid Angle—The angle between the sphenoid bone and the clivus. (Also known as the basal angle of the skull.)

Sphenoid Bone, *n.*—Irregular wedge-shaped bone at base of the skull.

Sphenoid or Sphenoidal Sinus—One of the accessory nasal sinuses.

Sphenoparietal, *adj.*—Of or pertaining to the sphenoid and parietal bone.

Sphere Gap—A variable gap between spheres connected across a high tension circuit, the purpose of which is to measure the voltage.

Spherical, *adj.*—Of or pertaining to a sphere; globular shaped.

Spherocytic Anemia—A familial hemolytic icterus characterized by enlargement of the spleen, hemolytic blood crises, and spherical appearance of the red blood cells. Radiographically it shows the same signs as other hemolytic anemias such as Cooley's and Sickle Cell.

Sphincter, *n.*—A circular muscle which, by its contraction, produces closure of a canal or pouch.

Spicule, *n.*—A small fragment; as, a small spicule of bone.

Spina Bifida—A congenital defect consisting of failure of fusion of the laminae over the lower vertebral column with herniation of the meninges.

Spina Bifida Occulta—Hidden or obscure spina bifida without herniation of meninges.

Spina Ventosa—A condition occasionally seen in neoplasm or tuberculosis of bone in which there is absorption of the bone in the medulla with a new deposit under the periosteum having a radiographic appearance as if the bone were inflated with air.

Spinal Cord—The portion of the nervous system extending from the brain down through the spinal canal.

Spinal Fluid—Fluid in the spinal canal surrounding the cord.

Spine, *n.*—The vertebrae composing the backbone or vertebral column.

Spine of a Bone—A short outward projection, as the spine of the sphenoid or scapula.

Spine of the Scapula—The heavy bony process which projects upward and outward from the dorsum of the scapula.

Spine of the Tibia—The pointed bony projection on the upper surface of the tibia for attachment of cruciate ligaments of the knee joint.

Spinning Top Test—A circular metallic disc with a perforation in its periphery for measuring accuracy of the timing mechanism of an x-ray circuit.

Spinogram, *n.*—A myelogram or injection of an opaque medium into the subarachnoid space of the spinal cord.

Spinosum, *adj.*—Of or pertaining to the spine of the sphenoid bone as the foramen spinosum.

Spinous Process—That part of a vertebra which projects backward from the arch, giving attachment to muscles. A backward prolongation from the lower angle of the great wing of the sphenoid bone.

Spiral, *adj.*—Describing a fracture having a spiral line of separation, i.e. winding.

Splanchnic, *adj.*—Of or pertaining to the internal organs or viscera.

Spleen, *n.*—One of the abdominal organs which has to do with disintegration of old blood corpuscles, and is a part of the reticulo-endothelial system.

Splenic, *adj.*—Of or pertaining to the spleen.

Splenic Flexure Syndrome—A large collection of air in the splenic flexure beneath the left hemidiaphragm producing symptoms resembling cardiac pain and discomfort.

Splenomegaly, *n.*—Enlargement of the spleen.

Splenomyelogenous Leukemia—A fatal disease of the blood characterized by enlargement of the spleen.

Spondylarthritis, Ankylosing[1]—Rheumatoid arthritis of the spine or Marie-Strümpell Disease. Pathologic changes begin in the intervertebral articulations and sacroiliac joints. (cf. spondylitis.)

Spondylitis, *n.*—Inflammation of the spine, arth-

[1] Marie, P.: Sur la spondylose rhizomelique. *Rev. de med. 18*:285–345, 1898.

ritis of the spine. When tuberculous known as Pott's disease. Pathologic changes begin in the vertebrae and intervertebral joints. (cf. spondylarthritis.)

Spondylitis Deformans, *n.*—Deforming arthritis of the spine. (Marie-Strümpell's type.)

Spondylitis, Paratyphoid—In this condition as well as typhoid fever and brucellosis, a non-suppurative type of osteomyelitis may be seen with involvement of the intervertebral discs and a tendency to bone fusion when the spine is immobilized.

Spondylitis, Rheumatoid[1,2]—Ankylosing spondylarthritis; Marie-Strümpell type.

Spondylitis Rhizomelique[1]—A form of rheumatoid spondylitis involvement of the shoulder girdles and hip joints.

Spondylolisthesis, *n.*—Luxation of vertebrae, usually of the fifth lumbar forward on the sacrum, due to a congenital defect in the neural arch. This slipping of the vertebrae is designated as first, second, and third degree, depending upon how far it has slipped forward. (See also prespondylolisthesis.)

Spondylolysis, *n.*—The breaking down of a vertebral structure, such as the neural arch.

Spondylolysis Interarticularis—A congenital defect or break in the neural arch at the isthmus or pars interarticularis.

Spondyloschisis, *n.*—Congenital fissure in the neural arch.

Sponge, *n.*—Any absorbent material used in surgery for mopping blood and other fluids.

Sponge, radiopaque—One made visible on x-ray film by radiopaque threads woven into it.

Spongioblastoma, *n.*—A form of malignant brain tumor.

Spongiosclerosis, *n.*—A thickening of compact bone which may be seen as a condensing osteitis as in the ilium or in local metastases from carcinoma of the prostate. It may also be generalized as in fluorine toxicosis or in hypoparathyroidism.

Spontaneous, *adj.*—Without apparent stimulation.

Spontaneous Fistula—A pathological connection or pathway formed between two hollow viscera, usually as the result of inflammatory disease such as between the gallbladder and the duodenum.

Spontaneous Fracture—One occurring with little or no evidence of trauma and usually secondary to pathological change.

Spontaneous Pneumothorax—Sudden filling with air of the potential space between the layers of pleura without apparent precipitating cause. Believed due to rupture of an emphysematous bleb.

Spot Film—Small films of a limited area made by means of a spot filming device while using the fluoroscope for exactly positioning the patient.

Spot-Film Radiography—Making radiographic exposures of a limited area at the instant a part is visualized on the fluoroscopic screen.

Sprain, *n.*—Tearing of ligaments or tendons about a joint.

Sprengel's Deformity—Congenital elevation of the scapula with an omovertebral process.

Sprue, *n.*—A deficiency disease which occurs principally in the tropics and is characterized by stomatitis, diarrhea, anemia and emaciation. It also produces the so-called "deficiency pattern" in the small intestine. There is a non-tropical variety.

Spur, *n.*—An osteophyte or lip or beak on the articular margin of a projecting bone; a horny outgrowth from the skin.

Spurious Count—One caused by any other factor than the radiation it is desired to detect.

Spurring, *adj.*—Refers to spur or osteophyte formation about a joint.

Squamous, *adj.*—Scale-like, as a squamous cell carcinoma of the skin.

Squamous Cell Carcinoma—Epidermoid carcinoma of the skin arising from the epidermal skin layer. Unlike the basal cell type, may metastasize to regional lymph glands.

Squamous Portion of Temporal Bone—The flat expanded portion of this bone which forms the "temple" of the head.

Stabilizer, *n.*—An instrument used in an x-ray machine to render the milliamperage output of the x-ray constant.

Stable Isotope—One of an element which is not radioactive.

Stable Primary Complex—The calcified glands and parenchymatous foci of primary pulmonary tuberculosis. (See Ranke complex.)

Staghorn Calculus—A large calculus entirely or partially filling the pelvis, infundibula, and calyces of the kidney giving it a staghorn appearance.

Staging of Disease[3]—A method of classifying extent of malignant disease, as for example, cancer in the pelvis.

Stage I.[4]—Irrespective of size, character, or secondary infection, the tumor is strictly confined to the cervix.

Stage II.—Parametrium: The tumor infiltrates the parametrium on one or both sides but does not reach the pelvic wall.

[1] Marie, P.: Sur la spondylose rhizomelique. *Rev. de med. 18*:285-345, 1898.

[2] Strümpell, E. A. G. G.: *Lehrbuch der Speciellen Pathologie und Therapie der Innerin Krankheiten*, Vol. 2:2, p. 152, 1884.

[3] Ackerman, L. J., and Del Regato, Juan A.: Cancer—Diagnosis, Treatment and Prognosis. St. Louis, C. V. Mosby Co. 1947.

[4] From United Nations Committee on Hygiene, Subcommittee on Radio-Therapy of Cancer, 1929.

Vagina: The tumor invades the vaginal wall but does not involve its lower third.

Corpus: Tumor spreads to the body of the uterus through the endocervical canal.

Stage III. Parametrium: The tumor invades the parametrium in its entire length on one or both sides.

Vagina: The tumor invades the vaginal wall down to its lower third.

Isolated pelvic metastasis: Irrespective of the extent of the primary growth, isolated metastasis against the pelvic wall is present.

Stage IV. Bladder: The tumor invades the bladder wall.

Rectum: The tumor invades the rectovaginal septum.

Distant metastases: Irrespective of the extent of the primary growth, distant metastases are present.

Standard Position—Accepted position for radiographic examination of any anatomical part.

Staphylococcal, *adj.*—Of or pertaining to the staphylococcus.

Staphylococcic, *adj.*—Of or pertaining to the staphylococcus.

Staphylococcic Spondylitis—Inflammation of the intervertebral joints due to staphylococcus infection.

Staple, *n.*—Downing metallic staple for fastening fractures in orthopedic surgery. (See chart p. 109.)

Stasis, *n.*—Standing still or stagnated; i.e. stopping of blood flow; hemostasis.

Statcoulomb, *n.* — A charge carried by 2.083×10^9 ions of either sign equals one statcoulomb.

Static Electricity—An electric charge usually generated by rubbing one substance against another such as rubber or amber with wool, and/or in the handling of films as in removing them from their wrappers and placing in a cassette.

Static Markings—Artefacts produced on a film by electrical discharges usually produced by friction in handling films or cassettes.

Stationary Anode—An x-ray tube in which the target is fixed, compared with a rotating anode tube in which the target constantly turns on a rotor.

Stationary Grid—A thin wafer grid placed between the cassette and the part to be examined in order to absorb secondary radiation. (cf. Moving Bucky Grid.)

Status Thymicolymphaticus—Hyperplasia of the lymphatic structures, usually in infants and children associated with persistence of the thymus gland and often said to be associated with sudden death.

Steatorrhea, *n.*—The passage of fatty foul-smelling stools observed in certain pancreatic diseases. This may also lead to osteomalacia.

Steer Horn Stomach—A high transverse position of the stomach, giving it a steer horn appearance; hypersthenic type of stomach.

Steinman Pin—An intramedullary pin used for fixation of fractures in orthopedic surgery. (See chart on p. 109.)

Stem, *n.*—A main branch of a truck; i.e. main stem bronchus.

Stem Bronchus—One of the principal or primary subdivisions of a main bronchus.

Stem Radiation—X rays originating from parts of the anode other than its target, specifically, from the target's support.

Stenosis, *pl.* *-es*, *n.*—A stricture or constriction of a tubular structure.

Stensen's Duct—The duct carrying saliva from the parotid gland.

Stenver's Projection[1]—A PA projection of the skull with the saggital plane directed obliquely 45° from the vertical, in order to visualize the petrous ridge of the temporal bone.

Stephanion, *n.*—An anatomical topographic point where the coronal suture crosses the temporal crest.

Step-Up or Step-Down Transformers—These either increase or decrease the voltage. Step-down transformers furnish current to heat the filament in the x-ray tube; step-up transformers provide high KV across the tube.

Stercoroma, *n.*—(Scatoma) A collection of inspissated feces in the colon or rectum simulating an abdominal tumor.

Stereogram, *n.*—Films taken stereoscopically for stereoscopic examination.

Stereoradiography, *n.*—The roentgenographic procedure of producing a pair of films identical in all respects except that the tube has been shifted a distance depending upon the focus-film distance, either horizontally or vertically. The films so produced are then viewed in a stereoscopic viewing box in order to produce a third dimensional effect.

Stereoscope, *n.*—An instrument consisting of two illuminating boxes for the illumination of two separate radiographs taken from two positions of the target, with a two-faced mirror in between to fuse the images as the observer views them.

Stereoscopic Examination[2]—An x-ray examina-

[1] Stenvers, H. W.: Roentgenology of the os petrosum. *Arch. Radiol. & Electroth., 22*:97–119, 1917.

[2] Etter, L. E.: Essentials of stereoscopic roentgenography. *Am. J. Roentgenol. & Rad. Ther.*, 1951, 66, 248.

tion which produces an impression of the third dimension. (See also stereoradiography.)

Sterile, *n.*—Infertile, free from pathogenic organisms.

Sterility, *n.*—The condition of being infertile or unable to conceive.

Sternal, *adj.*—Of or pertaining to the sternum.

Sternal Depression—Funnel breast or pectus excavatum.

Sternoclavicular, *adj.*—Pertaining to the joint between the sternum and clavicle.

Sternoclavicular Joint—The joint between the sternum and clavicle.

Sternocleidal, *adj.*—Pertaining to the sternum and clavicle.

Sternocleidomastoid, *n.*—A muscle between three points of attachment—the sternum, clavicle and mastoid process.

Sternum, *n.*—Breast bone composed of three segments: the manubrium, body (gladiolus), and xiphoid (ensiform) process.

Stethoscope, *n.*—An instrument used by physicians for listening to the sounds produced within the body.

Stewart-Morel Syndrome[1]—Also Stewart-Morel-Moore syndrome which includes benign hyperostosis of the frontal bone associated with girdle obesity, hirsutism of the face and headaches, usually in women of menopausal age.

Sthenic,—Strong, active, normal. Eutonic or orthotonic.

Stierlin's Sign—In tuberculosis of the colon when the ileum and transverse colon are filled with barium, it promptly leaves the cecum and ascending colon because of irritability and spasm.

Still's Disease—Juvenile rheumatoid arthritis. (Juvenile Polyarthritis.)

Stippled, *adj.*—A speckled appearance, as in stippled calcification in a gland in which there are punctate areas of calcification.

Stirrup Bone—Stapes of the ear.

Stoma, *n.*—A mouth or small opening or pore; artificially created opening between two passages or body cavities (enterostomy stoma) or between a cavity or passage and the body's surface. (Colostomy stoma.)

Stomach, *n.*—The upper expanded portion of the gastrointestinal tract for digestion of food connecting the esophagus and the duodenum.

Stomach, Intrathoracic—Herniation of the stomach through the foramen of Morgagni or the diaphragmatic hiatus producing the so-called "upside-down stomach."

[1] Moore, Sherwood: *Hyperostosis Cranii: Stewart-Morel Syndrome; Metabolic Craniopathy; Morgagni's Syndrome; Stewart-Morel-Moore Syndrome (Ritvo); Le Syndrome de Morgagni-Morel,* Springfield, Illinois, Charles C Thomas 1955.

Stomach Volvulus—Torsion or twisting of the stomach with production of partial obstruction.

Stomal Ulcer—A peptic ulcer occurring at the margin of a gastroenterostomy stoma; marginal ulcer.

Stop Bath—A solution of acetic acid and water used between development and fixing of films and serving two purposes: To neutralize the alkali of the developer and stop development quickly.

Stopping Power—Reciprocal of the thickness of a solid which absorbs an identical amount of alpha radiation as 1 cm. of air.

Strangulation, *n.*—The forcible protrusion of a structure through a small opening so that the blood supply is cut off, i.e. hernia.

Strangulation of Bowel—Twisting of the bowel with occlusion of circulation associated with either an internal or external herniation.

Stratigraphy, *n.*—One of the terms for body section roentgenography in which a single layer or stratum of a part is brought into focus, the others, being blurred out of sharp definition.

Stratigram, *n.*—Film of a single layer produced by stratigraphy. (Body section roentgenography.)

Stratosphere, *n.*—Upper region of the atmosphere, above seven miles, more or less (depending on latitude, season and weather), in which temperature changes little with altitude, and clouds of water never form.

Strawberry Gallbladder—The macroscopic appearance of the lining membrane of a gallbladder with some form of cholecystitis.

Stray Radiation—That radiation which does not serve any useful purpose and emanates from points within an x-ray tube other than the focal spot.

Streptococcal, *adj.*—Of or pertaining to the streptococcus.

Streptococcic, *adj.*—Of or pertaining to the streptococcus.

Streptococcus, *pl.* *-i,* *n.*—Spherical microorganisms arranged in chains which are grampositive.

Striated, *adj.*—Striped or marked by streaks or striae, as striped muscle.

Stricture, *n.*—A narrowing of the lumen of a normal canal or cavity by scar tissue resulting from any pathological process.

String Sign—A thin column of barium seen in the later stages of terminal ileitis or regional enteritis (Crohn's Disease) where the inflammatory process has eventuated in cicatrized bowel with narrowed lumen.

Strontium Iodide—A chemical which is injected into the amniotic cavity of a pregnant woman in order to outline the fetus on radiographic examination.

Strumous, *adj.*—Referring to scrofula or goiter. Scrofula is a glandular swelling, usually tuberculous in nature, and in medieval times was referred to as "the King's Evil."

Sturge-Weber's Disease[1,2]—(also called Sturge-Weber-Dimitri's Disease) Angiomatous lesions of the brain containing calcifications resembling convolutions and usually associated with a port wine stain on the ipsolateral side of the face. (Encephalotrigeminal angiomatosis.)

Sturge-Weber Syndrome[2]—Vascular nevi along the course of the superior and middle branches of the trigeminal nerve, glaucoma on the same side, and nevi of the pia. (See also encephalotrigeminal angiomatosis.)

Styloid, *adj.*—Resembling a stylus or pen.

Styloid Process of Radius—The process of the lower end of the radius near the wrist joint.

Styloid Process of Temporal Bone—A pointed process of varying length extending downward into the neck from the inferior surface of the temporal bone and giving attachment to the stylohyoid muscle.

Styloid Process of Ulna—The prominent process of the lower end of the ulna near the wrist joint.

Sub—*prefix*, meaning below, beneath or under; as, subglenoid.

Subarachnoid Cisternae—Expansions of the subarachnoid spaces; collections or reservoirs of cerebrospinal fluid as in the cisterna chiasmatis, interpeduncularis, ambiens and pontis.

Subarachnoid Spaces—Spaces beneath the arachnoid covering of the brain and the spinal cord.

Subastragalar, *adj.*—Beneath the astragalus or talus.

Subatomic, *adj.*—A particle smaller than an atom such as a proton or meson.

Subchondral Necrosis—A disease of the spine occurring during the development period.

Subclavian, *adj.*—Beneath the clavicle.

Subclavian Artery—A large artery beneath the clavicle.

Subclavicular, *adj.*—Beneath the clavicle.

Subcoracoid Dislocation—A dislocation of the head of the humerus below the coracoid process of the scapula.

Subcostal, *adj.*—Beneath the ribs.

Subcritical, *n.*—Having an effective multiplication constant less than 1, so that a self-sustaining fission-chain reaction cannot be maintained.

Subcutaneous, *adj.*—Beneath the skin; hypodermic.

Subdeltoid—Beneath the deltoid muscle.

Subdiaphragmatic, *adj.*—Under the diaphragm.

Subdural Air—Seen beneath the dura, as under the tentorium cerebelli, in pneumonencephalograms when air has been injected into the subdural space instead of into the subarachnoid space.

Subdural Hematoma—A collection of blood beneath the dura.

Subglenoid Dislocation—A dislocation of the head of the humerus below the glenoid cavity.

Subhepatic, *adj.*—Beneath the liver.

Sublingual, *adj.*—Beneath the tongue.

Sublingual Gland and Duct—The salivary gland beneath the tongue with its duct opening on each side of the frenum.

Subluxation, *n.*—An incomplete or partial dislocation.

Submaxillary, *adj.*—Beneath the inferior maxillary bone, or the mandible.

Submaxillary Gland and Duct—The gland lying below the body of the mandible with the open- of the duct (Wharton's) alongside of the tongue.

Submento—*prefix* meaning situated below the chin.

Submento-Vertex—A roentgenographic position in which the central ray is directed just below the symphysis mentis toward the crown of the head which rests on the film, thus producing an axial view of the base of the skull.

Submicroscopic, *adj.*—A particle or organism too small to be seen through a microscope.

Subperiosteal, *adj.*—Beneath the periosteum.

Subphrenic, *adj.*—Under the diaphragm.

Subphrenic Disease—Inflammatory disease as, for example, abscess beneath the diaphragm.

Subphrenic Space—The space beneath the diaphragm.

Subpubic Arch—The arch formed between the symphysis pubis above and the rami of the pubic bones on either side.

Subserous—Beneath a serous membrane.

Substance Specific Activity—Radioactivity per unit weight of a compound in question, expressed in curies per gram.

Substernal, *adj.*—Situated beneath the breastbone.

Substernal Goiter—Substernal enlarged thyroid.

Substernal Thyroid—An ectopic position of the thyroid gland or thyroid tissue situated beneath the manubrium or gladiolus of the ster-

[1] Sturge, W. A.: A case of partial epilepsy, apparently due to a lesion of one of the vasomotor centers of the brain. *Tr. Clin. Soc. London, 12:* 162–167, 1879.

[2] Weber, F. P.: Right-sided hemi-hypoatrophy resulting from rightsided congenital spastic hemiplegia with a morbid condition of the left side of the brain revealed by radiograms. *J. Neurol. and Psychopath., 3:*134–139, 1922, 23.

[3] Green, J. R.: Encephalo-trigeminal angiomatosis, *J. Neuropath. & Exper. Neurol., 4:*27–42, Jan. 1945.

num. Such a portion of the gland is not necessarily connected with the main gland which may be in normal position.

Subtentorial Air—Visualized beneath the tentorium cerebelli when there has been injection of air into the subdural space instead of into the subarachnoid space in pneumoencephalography.

Subtotal Gastrectomy—Something less than complete removal of the stomach.

Sudeck's Atrophy or Disease—Acute bone atrophy after an injury, related to trophic disturbance through reflex phenomenon. (cf. osteoporosis or atrophy of disease.)

Sulcus, *pl.* **-i,** *n.*—A groove, trench or furrow especially a fissure of the brain.

Sulfhydryl, *n.*—A chemical radical (SH) constituting an important component of many tissue enzymes.

Sulkowitch Test—One for the detection of calcium in the urine.

Super—*prefix* meaning above or over.

Superciliary, *adj.*—A ridge on the frontal bone just above the eyebrow.

Superciliary Ridge—The supraorbital ridge.

Superimposition, *n.*—A situation commonly encountered in roentgen anatomy where one part lies upon another, but where the part in question may be visualized to advantage by partly rotating the patient.

Superior, *adj.*—Above.

Superior Mesenteric Artery Syndrome—A form of partial intestinal obstruction produced by the superior mesenteric artery crossing and pressing upon the second portion of the duodenum.[1,2]

Superior Position—Higher or above.

Superior Sulcus Tumor of Pancoast[3]—A form of bronchiogenic carcinoma usually involving the upper and medial segment of the upper lobe of the lung characteristically producing erosion of the ribs and/or transverse processes of the vertebrae.

Supernumerary Bones—Greater number of bones than normal: extra bones.

Supero-Inferior—Roentgenographic position of a part in such a way that the x-ray beam enters it from above and emerges from below.

Supervoltage, *n.*—Unusually high kilovoltage used in roentgen therapy of 1,000 KV or more.

[1] Bitner, Walter P.: Arteriomesenteric occlusion of the duodenum. *Am. J. Roentgenol., Rad. Ther. & Nuc. Med., 79:5,* May, 1958.

[2] Rosenburg, Sidney A. and Sampson, Arnold: The syndrome of mesenteric vascular compression of the duodenum, *A.M.A. Arch. of Surg., 73:296-304,* Aug. 1956.

[3] Pancoast, Henry K.: Importance of careful roentgen-ray investigation of apical chest tumors, *Am. J. Roentgenol. & Rad. Ther., XIII:95,* 1925.

Supination, *n.*—Turning of hand with palm uppermost. (cf. pronation.)

Supine, *adj.*—A horizontal position of the body lying on the back with face up as opposed to prone.

Suppression, *n.*—Elimination of a phase of current with a self-rectified x-ray tube.

Suppurate, *v.*—To form pus.

Suppuration, *n.*—The process of pus formation; a purulent discharge.

Suppurative, *adj.*—Of or pertaining to pus formation.

Suppurative Pericarditis—Pus within the pericardium.

Supra—*prefix* meaning beyond, superior or above.

Supra-Apical, *adj.*—Situated above the apex, i.e., supra-apical empyema.

Supracardiac Shadow—The outline of the aorta showing both its ascending and descending components silhouetted against the background of the air-containing lungs, and above the cardiac silhouette.

Supracondylar, *adj.*—Above the condyle.

Supracondylar Fracture—A fracture of the humerus above the condyle.

Supradiaphragmatic, *adj.*—Situated above the diaphragm.

Supraorbital, *adj.*—Above the upper margin of the orbit as the supraorbital notch, foramen or ridge.

Suprarenal Glands—Ductless glands located above both kidneys; the adrenals.

Suprasellar, *adj.*—Above the sella turcica.

Suprasellar Adenoma—A tumor situated above the sella turcica, possibly a craniopharyngioma, or pituitary stalk tumor.

Supraspinatus, *n.*—A muscle which holds head of humerus in glenoid cavity.

Supraspinous, *adj.*—Situated above a spinous process.

Suprasternal Notch—The depression above the manubrium of the sternum.

Supratentorial, *adj.*—Structures situated above the tentorium cerebelli, a fold of dura mater which separates the posterior cranial fossa from the remainder of the cranium.

Surface, *n.*—The exterior or inner surface which may be broad or narrow, smooth or irregular. A side of any solid.

Surge, *n.*—A sudden high voltage discharge noted in high tension line during operation of high voltage apparatus.

Surge Arrestor—A piece of high resistance material introduced across high voltage lines to arrest electrical surges.

Surgical Cholangiogram—One done on the operating table before insertion of the T-tube.

Surgical Neck—Referring to the portion of the shaft of a bone such as the humerus just below anatomical neck.

Sutural Bones—These are supernumerary or Wormian bones found principally in the lambdoid suture and occasionally in the coronal and sagittal sutures.

Suture, *n.*—Line of union between bones of the skull. Material used for suturing, and also as a verb meaning to sew or bind up a wound.

Swallowing Act—Deglutition which can be followed roentgenographically by observing passage of a mouthful of barium.

Sweet's Foreign Body Localization—A roentgenographic method and device for locating an opaque foreign body in the eye, exactly within the globe or the orbit.

Swiss Cheese Appearance—A large, vacuolated pattern usually seen in the bases of the lungs in chronic cystic disease or in advanced bronchiectasis. (See also honeycombing.)

Sylvian Fissure—The lateral cerebral fissure of the brain separating the temporal lobe from the frontal and overlying parietal lobe.

Sylvian Group—The middle cerebral artery and its subdivisions extending along the Sylvian fissure, visualized in cerebral angiograms.

Sym—A *prefix* meaning beside or with.

Symmetrical, *n.*—Exhibiting correspondence in size and shape of parts. Denoting an atomic arrangement in a molecule at equal relative intervals.

Sympathetic Nervous System—A system of nerves and ganglia regulating many of the autonomic functions of the body and connected with the parasympathetic nervous system.

Sympathetoblastoma (Sympathicoblastoma) *n.*—A malignant tumor of embryonal sympathetic nerve cells of the adrenal gland. In Hutchison's type there are metastases to the skull and bones, usually arising from the left adrenal.

Symphyseal, *adj.*—Of or pertaining to a symphysis.

Symphysis, *n.*—The union of two paired bones, e.g. symphysis pubis.

Symphysis Mentis—The central line of union of the two halves of the lower jaw or mandible.

Symphysis Pubis—The bony arch of the front of the pelvis where the two pubic bones join.

Syn—*prefix* meaning along, together or beside.

Synarthrosis, *pl. -es, n.*—The union of two bones without a joint and without the possibility of movement.

Synchrocyclotron, *n.*—A type of cyclotron in which the radio frequency of the electric field is frequency modulated so that it permits acceleration of particles to relativistic energies.

Syndrome, *n.*—A complex of symptoms.

Syndrome of Paterson—(Plummer-Vision Syndrome)—One in which a veil or membrane in the hypopharynx is associated with iron deficiency anemia.

Synostosis, *n.*—Growing together of two bones forming a bridge between them.

Synovia (Joint Oil)*n.*—A viscid fluid secreted by the synovial membrane and found in bursae, joints and tendon sheaths.

Synovial, *adj.*—Of or pertaining to synovia.

Synovial Fluid—The clear viscid fluid found in a joint; synovia.

Synovial Membrane—Lining of a joint secreting synovia.

Synovioma,[1] *n.*—Tumors of the articular synovial membrane and comprise some of the most common primary malignant tumors of joints. The knee is the most frequent site of involvement.

Synovitis, *n.*—Inflammation of a synovial membrane.

Syphilis, *n.*—A constitutional disease usually acquired by venereal infection which can affect any of the structures, or tissues of the body. (See also lues, luetic.)

Syphilitic, *adj.*—Pertaining to syphilis.

Syringomyelia, *n.*—A disease marked by cavities in the spinal cord producing paresthesia and anesthesia usually of the upper extremities. There is also frequently produced a neurotrophic arthropathy in the extremities involved.

System, *n.*—An anatomic term referring to a group of related structures such as the cardiovascular system or the central nervous system.

[1] Lewis, Raymond W.: *The Joints of the Extremities.* Springfield, Illinois, Charles C Thomas, 1955.

T

Tabes Dorsalis—Syphilis of the spinal cord causing paralyses of the lower extremities, and characteristic changes in the joints. (Charcot's joints.)

Tabetic Spondylitis—Inflammation of the vertebral bodies and joints due to syphilitic infection.

Table, X-Ray—A motor driven or hand-operated couch with a radiolucent top used for conducting fluoroscopic and radiographic examinations of patients in upright, horizontal or Trendelenberg positions.

Tachycardia, *n.*—Abnormal rapidity of the heart action.

Tachypnea, *n.*—Very rapid breathing.

Taenia Coli—The three ribbon-like bands of longitudinal muscle on the colon which, when they contract, produce haustrations.

Taenia Saginata—The beef tapeworm.

Tagged Compound—Same as labeled compound, one which, by observations of radioactivity or isotopic composition may be followed through physical, chemical, or biological processes.

Talipes Equinovarus—A nontraumatic congenital deviation of the foot with it turned inward and downward (club foot).

Talipes Valgus—Congenital outward deviation of the foot, a variety of club foot.

Talipomanus Varus—Club hand, with the part turned inward and downward.

Talocalcaneal, *adj.*—Pertaining to the talocalcaneal joint or ligament; the structures between the talus and calcaneus.

Talocalcaneal Joint—The joint between the talus or astragalus and the calcaneus (os calcis).

Talocalcaneal-Navicular—The joints between the talus, calcaneus, and the navicular (scaphoid) bones of the ankle.

Talotibial, *adj.*—Of or pertaining to the joint between the talus and tibia.

Talus (BNA), *n.*—(Also Astragalus.) One of the tarsal bones articulating with the tibia to form the ankle joint.

Talus Fracture—This is a fracture prone to undergo vascular necrosis of the posterior segment because its blood supply is disturbed.

Tampon, *n.*—A ball of gauze or cotton-wool for packing into a cavity to arrest hemorrhage.

Tamponade, *v.*—Placing a tampon within a cavity to arrest hemorrhage or absorb secretions.

Tamponade, Cardiac—Hemorrhage within the pericardium causing compression of the heart with arrest.

Tangential, *adj.*—Pertaining to the nature of a tangent; an x-ray projection made on a line tangent to a curve surface.

Tannic Acid—An astringent used frequently in barium enemas to produce more complete evacuation.

Tantalum, *n.*—A hard, ductile, gray-white, acid resisting metallic element of the vanadium family, found in tantalite, columbite and other rare minerals. (cf. vitallium.)

Tantalum, Mesh—A fine wire mesh used in herniorrhaphies visible on radiographs.

Target, *n.*—The anti-cathode (anode) or positive terminal of an x-ray tube which receives the impact of electrons in the production of x rays.

Target-skin Distance—The distance from the anode of an x-ray tube to the skin of the subject, one of the prime radiographic factors.

Target Theory—Also Hit Theory, which attempts to explain some biologic effects of radiation on the basis of ionization occurring in a very small sensitive region within the cell. One, two or more ionizing events or "hits" within the sensitive volume may be necessary to bring about the effect.

Tarsal, *adj.*—Of or pertaining to the foot or tarsal bones.

Tarsal Bone Fractures—These usually result from a fall or from landing on the feet as in the case of a paratrooper. Fractures of the talus and os calcis are of serious moment.

Tarsal Bones—Irregular bones of the foot between the ankle and metatarsal bones.

Tarsal Navicular—The scaphoid or navicular bone of the foot as distinguished from the carpal navicular, a similar bone in the wrist.

Tarsometatarsal Joints—The joints between the tarsal bones and the metatarsals.

Tarsus, *n.*—The foot or instep as separate from the ankle.

Taussig-Bing Syndrome—A congenital disorder in which the aorta arises from the right ventricle with over-riding of the pulmonary artery, and interventricular septal defect. This usually causes dilatation of the pulmonary artery but sometimes it is smaller than normal.

Tbc. (Abbrev.)—The disease tuberculosis, to be distinguished from T.B., the tubercle bacillus.

Tear Drop Heart—A configuration of the heart which is long and thin or hypoplastic seen in individuals with a long narrow chest and asthenic habitus.

Technique (Technic), *n.*—A certain prescribed procedure or method of performing an examination or operation. In radiography, this includes the proper positioning of the patient

and selection of the correct physical factors to produce a satisfactory roentgenogram.

Tegmen Tympani—Roof of tympanum separating middle ear from cranial cavity.

Tele—*Prefix* meaning at a distance.

Telepaque, *n.*—A proprietary drug given by mouth for cholecystography.

Teleroentgenogram, *n.*—(Six-feet film.) A film, usually of the chest, made at a distance of six feet.

Teleroentgenographic Examination—X-ray examination made at a distance of 6 feet.

Teleroentgenography, *n.*—Roentgenography at a longer distance than is usually employed (six feet).

Teletherapy, *n.*—Derived from the old "radium bomb" where the source of radiation is heavily shielded on all sides except one, through which the beam may be emitted toward the area to be treated. The same principle is used in the present day "cobalt bomb." (cf. Brachytherapy).

Temperature, Optimum—For development and processing x-ray film, 65°F.

Temporal, *adj.*—Pertaining to the temple; temporal region of the cranium.

Temporal Bone, *n.*—Irregular bone at side of base of skull, containing the organ of hearing.

Temporomandibular Joint (TMJ)—The joint between the temporal bone and the lower jaw located just anterior to the ear.

Temporomandibular Joint Dislocation—May be unilateral or bilateral and occurs when the condyle of the mandible luxates anteriorly to the articular tubercle of the temporal bone.

Tendinitis, *n.*—Inflammation of a tendon sheath or tendon. Also used interchangeably, but incorrectly, with bursitis. (See peritendinitis calcarea.)

Tendinous, *adj.*—Pertaining to, resembling, or of the nature of a tendon.

Tendon Achilles—The heavy tendon of the posterior muscles of the leg attached to the heel, which flex the knee and extend the ankle.

Tendon Sheaths—Synovial sheaths in which the tendons run.

Tenosynovitis, *n.*—Inflammation of a tendon and its sheath; inflammation of a tendon sheath.

Tenting of Diaphragm—A triangular, tent-like elevation of the dome of the diaphragm caused by the upward pull of a pleural adhesion.

Tentorial, *adj.*—Pertaining to the tentorium (anatomical part resembling a tent or a covering).

Tentorium, *n.*—A tough fibrous sheath of falx; the tentorium cerebelli, spread laterally between the cerebral hemispheres and the cerebellum.

Tentorium Cerebelli—A thin fold or sheath of dura mater interposed between the cerebellum and the occipital lobe of the brain and separating the cerebellar fossae from the remainder of the cranium. (cf. falx cerebelli.)

Teratoma, *n*—A tumor composed of various embryological elements.

Teridax, *n.*—A proprietary drug used for opacification of the gallbladder by the oral route.

Terminal, *n.*—The end of a wire or other electrical conductor where it is connected to a table, plug or socket.

Terminal Bronchiolar Carcinoma—A form of cancer of the lung in which it is uncertain from which cells it is derived. One view is that it originates from epithelium of an acinus or alveolus; the other that it arises from the terminal portion of a bronchiole. (See also Bronchiolar Carcinoma and Alveolar Cell Carcinoma).

Terminal Ileitis[1]—Regional enteritis or Crohn's Disease affecting the terminal portion of the ileum.

Terminal Ileum—The last 10 to 12 inches of the ileum proximal to the ileo-cecal valve.

Terminal Phalanx—The most distal of the phalanges.

Tertiary, *adj.*—The third in numerical order; the tertiary stage of syphilis.

Testes, *pl.*, *n.*—Male sex glands; gonads.

Tetraiodophenolphthalein (Iodeikon), *n.*—A drug used by intravenous injection to render the bile opaque to x rays so that the gallbladder can be visualized. Tetrabromphenolphthalein was first used intravenously by Dr. Evarts Graham and associates[2] of St. Louis for opacification of the gallbladder in 1925.

Tetralogy of Fallot—A congenital deformity of the heart manifested by interventricular septal defect, dextroposition of the aorta, pulmonary stenosis and enlargement of the right ventricle.

Tetrode, *n.*—An electron tube which contains four central elements of cathode, anode, control grid, and an accelerating or screen grid.

T-Fracture—One which is shaped like a letter T extending not only above the condyles of the end of a long bone, but between the condyles as well.

Thalamic, *adj.*—Of or pertaining to the thalamus.

[1] Crohn, B. B., Ginzburg, L., and Oppenheimer, S. D.: Regional enteritis, *J.A.M.A.*, *99*:1323, 1932.

[2] Graham, Evarts A., Cole, Warren, H., and Copher, Glover H.: Roentgenological visualization of the gallbladder by intravenous injections of tetrabromphenolphthalein. *Radiology*, *4*:83, 1925.

Graham, Evarts A.: Awarded gold medal of Radiological Society of North America for gallbladder dye test. *Radiology*, *6*:169, 1926.

Thalamus, *n.*—A portion of the midbrain having to do with emotional status.

Thalassemia, *n.*—Cooley's erythroblastic anemia which usually affects children descended from races bordering on the Mediterranean Sea; particularly the Italians.

Thenar Eminence—The eminence on the palm at the base of the thumb. (cf. Hypothenar Eminence.)

Therapy (Treatment)—Used in radiology to indicate treatment with radium, radioactive isotopes and/or x rays.

Thermal Diffusion—A system for separating isotopes depending on the fact that at a given temperature the lighter particles diffuse faster than the heavy ones.

Thermal Utilization Factor—The fraction of slow neutrons in a nuclear reactor absorbed by the uranium in the pile rather than by the moderator, impurities or fission products.

Thermoelectron, *n.*—Electron emitted by a heated body; i.e., from the filament of an x-ray tube.

Thickened Pleura—Increased density of the pleural coverings of the lungs due to chronic inflammatory disease or residuum of an acute inflammatory process.

Thickening, *n.*—Spoken of principally with reference to the pleura or peribronchial markings of the lung. In such cases, thickening means increased density of the parts.

Thigh, *n.*—The portion of the lower extremity between the hip and knee.

Thimble Ionization Chamber (Victoreen)—A thimble-size ionization chamber first devised by Fricke and Glasser, having a chamber of specific dimensions and wall of a material having the same effective atomic number as air. A form of dosimeter for accurately measuring x radiation.

Thinning, *n.*—Spoken of diminished thickness of a part such as cartilage space or intervertebral disc.

Thoracic, *adj.*—Pertaining to the chest and to the thoracic vertebrae.

Thoracic Aortography, Retrograde—A procedure in which a catheter is passed through a peripheral artery into the aorta where the contrast medium is rapidly injected and serial films thereafter obtained. This finds its greatest usefulness in demonstration of coarctation of the aorta, aorticopulmonary septal defects and in patent ductus arteriosus.

Thoracic Cage—The bony thorax consisting of the ribs and thoracic vertebrae.

Thoracic Cavity—The Chest cavity containing lungs, heart and mediastinum and is separated from the abdomen by the diaphragm.

Thoracic Deformities—Pectus excavatum (funnel breast) and kyphoscoliosis both will produce displacement of the heart with appearance of pathological alteration.

Thoracic Spine (Dorsal Spine)—The thoracic vertebrae to which the ribs are attached. Since the entire vertebral column may be considered dorsal spine, the term thoracic spine or even better thoracic vertebrae seems preferable as a description of this portion.

Thoracic Waist—An anatomical variant in which there is a depression of the ribs below the axillae but of no pathological significance.

Thoracic (Dorsal) Vertebrae—The vertebrae to which ribs are attached, twelve in number.

Thoracic Vertebral Fractures[1]—These occur commonly (±20 per cent) in convulsive therapy, but the incidence has been greatly reduced (±4 per cent) with the use of aneleptic drugs.

Thoracoplasty, *n.*—An operation on the chest which permits collapse of the chest wall by removal of a portion of a number of the ribs.

Thoraeus Filter—A filter designed by a Swedish physicist Thoraeus for use in roentgen therapy and consisting of copper, aluminum, and tin.

Thorax, *n.*—The chest.

Thorium, *n.*—The element 90. It occurs in nature and is a mixture of radioactive isotopes and has an atomic weight of 232.12.

Thorium Dioxide—A drug used for intravenous injection to aid in radiographic examination of liver, spleen, and circulatory system. (See also Hepatolienography.)

Thorotrast, *n.*—A proprietary drug used similarly as thorium dioxide. It is radioactive.

Thresher's Disease—This is a syndrome resembling that of asthmatic bronchitis caused by an organic dust mixture, particularly wheat dust, and produces, roentgenographically, intensification of the bronchovascular trunks and often associated soft nodular clouding of the lung fields. With chronic exposure, there may be a fine miliary type of nodulation scattered throughout all zones of both lung fields. (Same as "Farmers' lung.")

Threshold, *n.*—The smallest amount of radiation that will do damage to human beings. There is no threshold for genetic injury; even the smallest amount of radiation that strikes the gonads will cause some mutations. No one knows whether there is a threshold for bodily injury, i.e., whether there is a dose of radiation so small that it will not cause cancer in some susceptible people.

Threshold Dose—Smallest amount of radiation

[1] Newbury, Constance L. and Etter, Lewis E.: Clarification of the problem of vertebral fractures from Convulsive therapy. *Archives of Neurology and Psychiatry*, 74:472–478, Nov. 1955.

that will produce a detectable reaction in tissues.

Threshold Erythema Dose—Smallest amount of radiation delivered to the surface of the forearm producing in 80 per cent of the persons tested reddening of the skin in a period of 7 to 10 days. An erythema dose in general is the dose of radiation required to produce a reddening of the skin.

Thromboangiitis Obliterans—Obliterating endarteritis of the arterioles of the extremities, principally the feet, seen almost exclusively in the Jewish race and called Buerger's Disease.

Thrombophlebitis, *n.*—Inflammation with thrombus formation in a vein.

Thrombosis—Formation of a thrombus, or a clot.

Thrombosis, Mesenteric—In vascular occlusion of the mesentery, the roentgenographic appearance of dilated large bowel may be seen, especially if the superior mesenteric artery is occluded. (See also superior mesenteric artery syndrome.)

Thrombus, *n.*—A clot of blood within a vessel.

Thumb, *n.*—The first digit of the hand.

Thymoma, *n.*—A benign but occasionally malignant tumor of the thymus gland. These may be associated with myasthenia gravis and every attempt should be made to find one because, if present, removal of the thymoma may effect a cure.

Thymus, *n.*—A ductless gland located in the chest beneath the upper portion of the sternum, normally found in children up to two years of age.

Thymus, Hyperplasia Of—This is usually bilateral, but frequently shows asymmetrical enlargement most apt to occur in newborn infants. It is doubtful whether the enlargement is of any pathological significance.

Thyroid, *n.*—A ductless gland located in the neck, and concerned with the intricate mechanism of metabolism.

Thyroid Adenoma—A benign tumor of the thyroid gland.

Thyroid Carcinoma—A very malignant tumor tending to metastasize early to bone and producing osteolytic lesions particularly in the ribs, vertebrae and skull, similar to those of breast carcinoma.

Thyrotoxic, *adj.*—Of or pertaining to a toxic form of goiter.

Thyrotoxicosis, *n.*—Toxic goiter, hyperthyroidism or Graves' Disease.

Tibial Plateaus—The proximal articulating surfaces of the tibiae for articulation with the femoral condyles.

Tibial Tuberosity—The tubercle on the anterior surface of the proximal end of the tibia which may be affected in osteochondritis. (Osgood-Schlatter Disease.)

Tibiofibular Joints—The articulations between the distal and proximal ends of the fibula and the corresponding portions of the tibia.

Tic Douloureux—An extremely painful form of trifacial neuralgia in which all three divisions of the trigeminal nerve are affected.

Timer, *n.*—An instrument used on an x-ray machine to complete the electrical circuit so that x rays will be produced for a limited period of time.

Tissue Dose—From the radiobiologic standpoint, this is the dose in terms of energy absorbed per gram of tissue. Tissue dose is commonly estimated as a percentage of the skin dose at a particular depth.

Tissue-Equivalent Ionization Chamber—One in which the material of the walls, electrode and gas are so selected as to produce ionization essentially equivalent to that characteristic of the tissue under consideration.

Tissue-Equivalent Material—This is important in the construction of ionization chambers especially for neutron measurement and is an attempt to have material made up of the same elements and in the same proportions as they may occur in a particular biologic tissue.

TMJ—The temporomandibular joint (s).

Todd's Standards[1]—An atlas of skeletal maturation prepared by Dr. T. W. Todd and associates showing the normal epiphyseal development in the male and female wrist and hand at varying ages.

Toe, *n.*—One of the digits of the foot.

Tolerance Dose of X Rays—The dose of x rays which will be tolerated by the body without perceptible injury. More recently, the term "permissible dose" is used to mean the same thing.

Tomogram, *n.*—A radiograph made using a tomograph in which only one layer of tissue is in focus at one time.

Tomograph, *n.*—An x-ray apparatus used for making x-ray examinations of layers of tissue in depth, without interference of tissues above or below that level. (See also laminagraph.)

Tomography, *n.*—The process of making a tomogram. Also body section roentgenography.

Tone, (Tonus), *n.*—Partial contraction of a muscular structure due to continuous minute nervous stimulations.

Tongue, *n.*—The fleshy movable muscular organ on the floor of the mouth having to do with speech, taste, mastication, and swallowing.

Tooth, *pl.* **Teeth,** *n.*—Hard conical structures set

[1] Greulich, W. W., Pyle, S. I., Todd, T. Wingate: *Radiographic Atlas of Skeletal Development of the Hand and Wrist.* Palo Alto, Stanford University Press, 1950.

in the alveoli of the maxilla and of the mandible, a full permanent dentition amounting to 32. The deciduous or milk teeth are replaced by the permanent set during adolescence.

Topography, *n.*—The mapping out or description of the location of a structure or organ.

Torcular Herophili—The confluence of the lateral and straight sinuses in a groove on the inner surface of the occipital bone.

Torsion, *n.*—Twisting, turning, or rotation.

Torsion of the Heart—Turning or twisting of the heart giving it an apparent, although not actual abnormal, silhouette.

Torticollis, *n.*—Stiff neck (wry neck) caused by spasmodic contraction of neck muscles drawing the head to one side with chin pointing to the other side. Congenital or acquired.

Tortuosity, *n.*—Quality or state of being tortuous; crookedness; deviousness. A bend or twist; winding.

Tortuous Aorta—A twisted aorta seen in older patients, probably due to shortening.

Torulosis, *n.*—A form of fungus or yeast infection.

Torus Palatinus—A hard bony protuberance occurring in the median line of the roof of the oral cavity.

Towne-Chamberlain — (Chamberlain-Towne)—AP oblique projection of the skull suggested by Dr. W. E. Chamberlain as a means of demonstrating the petrous ridges. This description was published by Dr. E. D. Towne.[1]

Toxic, *adj.*—Poisonous.

Toxoplasmic, *adj.*—Of or referring to toxoplasmosis.

Toxoplasmosis, *n.*—A disease caused by a protozoan parasite, Toxoplasma, which may produce encephalitis and characteristic irregular and comma-shaped calcifications within the brain and its coverings.

Trabeculate, *v.*—Mark with cross bars.

Trabeculate Pattern—One, as of the lungs, having alternate areas of decreased and increased radiability, as in the bases of the lungs in bronchiectasis, (cf. reticular pattern.)

Trabeculation, *n.*—A pattern marked by trabeculae or cross bars.

Tracer, Isotopic—Used in biologic studies where a particular isotope may be incorporated into a sample to make possible observation of the course of that element in chemical, biologic or physical processes.

Trache—*prefix* pertaining to the trachea.

Tracheal, *adj.*—Pertaining to the trachea.

Tracheal Fistula—An artificial opening into the trachea which has failed to heal, or purposely kept open by means of a tube following tracheotomy.

Tracheobronchial Tree—The trachea with its main stem bronchi and smaller branches extending throughout the lungs.

Tracheobronchitis, *n.*—Acute or chronic inflammation of the tracheobronchial tree.

Tracheo-Esophageal Fistula—An abnormal opening between the esophagus and the trachea present usually as a congenital abnormality. Such a situation may also occur as a complication of malignant disease either in the esophagus or the lung.

Tracheostomy, *n.*—Surgical production of an artificial opening into the trachea through the neck.

Tracheotomy, *n.*—A surgical opening into the trachea in cases of laryngeal obstruction.

Track, *n.*—The path of an ionizing particle made visible in a cloud chamber or nuclear emulsion.

Traction, *n.*—Pull applied to the ends of a fracture for the purpose of adjusting the fragments and overcoming shortening.

Traction Diverticulum—One made by tension of adhesions on the wall of the esophagus, usually following an inflammatory change and occurring principally in the middle and upper thirds of the esophagus where they generally point upward. (cf. pulsion type.)

Tragacanth, *n.*—A gummy material obtained from an Eastern Mediterranean shrub used as a suspending agent in barium mixtures to improve visualization of the gastrointestinal mucosa.

Tragus, *n.*—A fleshy projection partially covering and anterior to the external auditory meatus.

Trans—*prefix* meaning across or over.

Transformer, *n.*—An x-ray transformer is a piece of electrical apparatus, made of a ring of iron with two separate coils of wire. The primary consists of a few turns of heavy wire, the secondary consists of many turns of fine wire. The entire apparatus is immersed in oil for insulation and provides high voltage and low current for the x-ray tube in the step-up type of transformer. A step-down transformer, wound in the opposite way, provides low voltage and relatively high current to heat the tube filament.

Transient, *n.*—That which is passing.

Transitional, *adj.*—Marked by or relating to a transition, passage from one state or position to another, or from one part to another part.

Transitional Vertebrae—A supernumerary vertebra such as a sixth lumbar which is transitional between the characteristics of lumbar vertebrae and sacral vertebrae. These may be partially or almost completely fused with the sacrum.

[1]Towne, E. D.: Erosion of petrous bone by acoustic nerve tumor. *Arch. Otolaryng.*, *4*:515–519, 1926.

Translumbar Aortography (Arteriography)—Roentgenographic visualization of the abdominal aorta and its branches following injection of an opaque medium into the aorta.

Transmutation, *n.*—The changing of one element into another; as, for example, the transmutation of Radium into Radon. The process of changing an atomic nucleus to one of a different atomic number by bombarding it with nuclear particles provided by a cyclotron or pile.

Transposition, *n.*—Location of bodily organs on the opposite to the normal side as transposition of the heart in dextrocardia.

Transudate, *n.*—Fluid or exudate which passes through a membrane such as the alveolar sacs of the lungs in passive congestion.

Transuranic Elements—Those with atomic numbers higher than that of uranium, number 92. Those at present known have the numbers 93 (neptunium), 94 (plutonium), 95 (americium), and 96 (curium).

Transverse, *adj.*—Extending out laterally, or sidewise, as transverse processes of vertebrae.

Transverse Colon—The portion of the colon which goes transversely across the upper abdomen.

Transverse Diameter—The greatest transverse intrathoracic measurement of the chest taken from the inner edges of the ribs. Also the greatest transverse diameter of the heart, representing the sums of the maximum right and the maximum left distances from the midline.

Transverse Plane—A plane which divides the body horizontally at any level.

Transverse Presentation—A presentation of the fetus with the trunk crosswise to the long axis of the pelvic inlet.

Transverse Processes of Vertebrae—The bony projections which extend outward on either side of a vertebra to furnish attachments for muscles.

Trapezium (BNA), *n.*—One of the distal row of carpal bones, on the lateral side, articulating with the thumb, and also known as the greater multangular.

Trapezoid Ridge—A roughened elevation on the superior surface of the clavicle extending from the coracoid tubercle to the lateral end of the bone.

Trapezoideum (BNA), *n.*—One of the carpal bones of the distal row, on the lateral side, and also known as the lesser multangular.

Trauma, *pl. -ta, n.*—Injury.

Traumatic, *adj.*—Caused by or relating to an injury.

Traumatic Arthropathy (Osteoarthropathy)—Bone reactive changes such as spurs, osteophytes and exostoses developing on the margins of joints as the result of single or multiple traumata. This gives an appearance sometimes described as hypertrophic arthritis, but since no inflammatory changes are involved, the term arthropathy is believed preferable.[1]

Traumatic Rupture—Spoken of severe injuries to the liver, spleen or other abdominal viscus.

Treacher Collins Syndrome[2]—Mandibulo-facial dystosis, characterized by disturbances of the extremities with oligodactylia, radio-ulnar synostoses, vertebral synostoses and facial maldevelopment. The facial bones are small and the external ear deformed.

Trefoil Deformity—Clover shaped deformity, as of the duodenal bulb.

Trendelenberg Position—The bed or table is raised from the foot, greatly elevating the knees, the legs projecting on an external leg rest.

Trepan, *n.*—A saw or trephine for the purpose of cutting a disc from the skull.

Trepanation, *v.*—The removal of a disc of bone from the skull by means of a trepan or trephine.

Trephine, *v.*—To perforate with a trephine. A cylindrical saw for cutting circular pieces of bone out of the skull.

Tri—*Prefix* meaning three.

Triangular Bone—The triquetrum, one of the proximal row of carpal bones.

Triangularis, *n.*—A muscle of the chin.

Trichinosis, *n.*—Infestation with trichina spiralis, a parasite found in pork.

Trichobezoar, *n.*—Hairball in the stomach.

Tricuspid Atresia—A congenital failure of development of this valve or partial blocking of it.

Tricuspid Disease—Inflammatory changes, usually rheumatic in nature, affecting this valve on the right side of the heart.

Tricuspid Valve—Between the right auricle and the right ventricle.

Trigone, *n.*—Spoken of a portion of the floor of the bladder between the ureteral and urethral orifices.

Trigonocephaly, *n.*—A form of craniostenosis in which there is pointing of the frontal bone.

Trimalleolar, *adj.*—Of or referring to the malleoli of the lower extremity of the tibia.

Trimalleolar Fractures—Ones involving the medial and anterior or posterior malleolus of the tibia, and the lateral malleolus of the fibula.

Triode, *n.*—An electron tube which contains three essential elements, a cathode, anode and a control element or grid.

[1] DeLorimier, A. A.: *The Arthropathies.* Chicago, Illinois, Yearbook Publishers, 1943.
[2] Collins, E. Treacher: Congenital anomalies. *Tr. of Path. Soc. U. Kingdom, 20:*190, 192, 1900.

-tripsy—*suffix* meaning crushing.

Triquetral, *adj.*—Of or referring to the triquetrum, one of the proximal row of carpal bones.

Triquetrous, *adj.*—Having three corners.

Triquetrum, *n.*—The cuneiform or triangular bone of the carpus; one of the proximal row of carpal bones.

Tritium, *n.*—The isotope of hydrogen with mass number 3 ($_1H^3$ or T).

Trochanter, *n.*—A heavy rounded projection of bone for attachment of muscles, such as, the greater and lesser trochanter of the femur.

Trochanteric, *adj.*—Of or pertaining to a trochanter.

Trochlea, *n.*—A structure having the function of a pulley; that part of the surface of the humerus which articulates with the ulna; a ring or hook through which a tendon or muscle projects; the articular smooth surface of a bone upon which another bone glides.

Troposphere, *n.*—Part of the atmosphere below the stratosphere.

True Conjugate—The conjugata vera; the AP diameter of the pelvic inlet from the promontory of the sacrum to the posterior superior margin of the symphysis pubis.

Truemmerfeld Zone—In Hypovitaminosis D (rickets) a zone of increased fragmentation in the diaphysis just below the epiphysis is given this designation. This zone is proximal to the dense white line of Fraenkel.

Truncated, *adj.*—To cut off at right angles to the long axis as a truncated cone.

Truncus Arteriosus—The main stem or trunk of an artery before its bifurcation.

"T" Tube—One used after cholecystectomy to drain the hepatic and common ducts.

Tube, *n.*—(See x-ray tube.) Cathode ray (Lenard) tube, or one of the other types of gas tubes such as a Geissler, Hittorf or Crooke's tube.

Tube Element—A part of the structure within the tube such as the heating element which has a part in the function of the tube without being a part of the tube itself.

Tube Stand—A perpendicular pillar with a cross-arm holding the x-ray tube in such a way that it may be positioned for radiographic examinations.

Tubercle (or Tuberosity), *n.*—Small rounded projection on a bone, as the tubercle of the skin.

Tubercle, *n.*—A focus of primary tuberculosis which may later calcify and be radiographically demonstrable.

Tubercle Bacillus (T.B.)—The microorganism causing tuberculosis. (cf. Tbc. = tuberculosis.)

Tuberculin, *n.*—A substance removed from a culture of tubercle bacilli and treated with detoxifying substances and used as a skin test for the presence of tuberculosis.

Tuberculoma, *n.*—A benign neoplasm of tuberculous origin, usually seen as a calcified focus in a lung field.

Tuberculoma, Brain—In this situation, deposits of calcium may be seen varying in size from a few millimeters up to one centimeter or even larger, and may appear anywhere within the calvarium, usually in association with tuberculosis elsewhere.

Tuberculosilicosis, *n.*—Tuberculosis complicating silicosis. See also silicotuberculosis.

Tuberculosis, *n.*—(Tbc.) A disease produced by the tubercle bacillus. This may be of the miliary, primary or reinfection phase type as seen in the pulmonary varieties. Tuberculosis of the bones and joints and other tissues of the body may occur.

Tuberculosis Sicca—A form of tuberculous arthritis usually seen in the shoulder where the process is marked by rarefaction of trabeculae and is due to actual infiltration by granulation tissue.

Tuberculous, *adj.*—Of or pertaining to tuberculosis.

Tuberculous Arthritis—Inflammation of a joint caused by the tubercle bacillus, and marked by destruction of the joint cartilage and of the neighboring bone with marked demineralization.

Tuberculous Colitis—Inflammation of the colon caused by the tubercle bacillus.

Tuberculous Osteitis—Tuberculosis of the bone.

Tuberculous Osteomyelitis—A very chronic form of osteomyelitis which tends to involve the medullary and cortical portions of the diaphysis and is usually sharply circumscribed appearing somewhat as cysts within bone.

Tuberculous Spondylitis—Tuberculosis of vertebrae. (Pott's Disease.)

Tuberculum Sellae—A protuberance just posterior to the optic groove and on the anterior superior margin of the pituitary fossa. (Also called the olivary eminence.)

Tuberosity, (Tubercle), *n.*—Small, rounded eminence on a bone, e.g., tuberosity of the humerus.

Tuberosity of the Humerus—Rounded eminence on the supero-lateral surface of the head of the bone.

Tuberosity of the Tibia—The rounded prominence on the front aspect of the tibia upon which one rests when kneeling. Also called the tibial tubercle.

Tuberous, *adj.*—Lumpy or nodular.

Tuberous Sclerosis—A disease manifested by

mental deficiency, adenoma, sebaceum and multiple intracranial calcifications.

Tubulation, *n.*—Normal canalization of the ends of long bones.

Tubules, *n.*—Urine collecting structures found in the parenchyma of the kidneys.

Tuft, *n.*—A small cluster of elongated flexible parts; the tips of the terminal phalanges.

Tularemia, *n.*—The undulant type of fever transmitted by infected animals such as rabbits, etc.

Tumor, *n.*—An abnormal swelling which may be benign or malignant; an abnormal multiplication of cells forming a new growth, such as cancer. Malignant tumors may be primary or metastatic.

Tumor Registry—A registry of various tumors kept at the Armed Forces Institute of Pathology at the Army Medical Center, Washington, D.C.

Tumor Stain—Flooding of minute blood vessels and vascular spaces in a brain tumor seen in cerebral angiography.

Tungsten, *n.*—Elemental substance of Wolfram, the chemical symbol of which is W. It has a very high melting point of 3700° C, and is therefore of use as the target material of an x-ray tube. Fine tungsten wire is also used in the filament of an x-ray tube for the same reason that it can stand a very high temperature without melting.

Tunnel View—Radiography of the knee made with the joint flexed and the central ray directed cephalad to clearly show the femoral condyles and intercondylar space.

Turbinate Bones—Bones projecting into the nasal cavities, also referred to as nasal conchae. These are described as the inferior, middle and superior turbinates.

Turbinated—Top or cone-shaped.

Turbinates, *pl.*, *n.*—Rounded projections of bone in the maxillary sinus region.

Türmschädel, *n.*—Tower skull or turricephaly, caused by premature closure of the cranial sutures. (Craniostenosis.)

Turner's Syndrome[1] **(Osteo-Onycho Dysplasia)**—This is a syndrome characterized by 1) Dystrophy of fingernails, 2) hypoplastic or rudimentary patellae, 3) prominent medial femoral condyles, 4) iliac horns, which are symmetrical, 5) hypoplastic radial heads, subluxated or dislocated posteriorly and 6) the condition is hereditary.

Turricephaly, *n.*—A form of craniostenosis, turrethead, steeple head or oxycephaly.

Twenty-four Hour Meal—A meal given in gastrointestinal examination to test the motility of the tract twenty-four hours after ingestion.

Tympanic, *adj.*—Of or pertaining to the ear drum.

Tympanum, *n.*—The ear drum covered by the membrana tympani.

Typhilitis, *n.*—Inflammation of the cecum.

Typhoid Colitis—Inflammation of the colon caused by the Bacillus typhosus.

Typhoid Fever—A chronic Typhus-like fever having a markedly febrile course associated with prostration. Arthritis of the mono- or polyarticular variety occurs in as many as twelve per cent of cases of typhoid and paratyphoid fever. Of particular importance is the possibility of spondylitis causing a localized destructive process of two adjoining lumbar vertebrae with extensive bony bridging between them.

Typhoid Spine—The occurrence of spondylitis, usually in the lumbar vertebrae, and frequently years after the initial disease. Manifested by a destructive process including the intervertebral disc with extensive bony bridging of the affected vertebrae.

[1] Turner, Henry H.: A syndrome of infantilism, congenital webbed neck and cubitus valgus. *Endocrinology*, *23*:566–574, 1938.

U

Ulcer (Ulceration), *n.*—An open sore on a cutaneous or mucous surface.

Ulcerative, *adj.*—Pertaining to an ulcer.

Ulna, *n.*—The smaller of the two bones of the forearm, on the medial side of the arm and, with the humerus and radius, forming the elbow joint.

Ultra Fine Focus Tube[1]—One having a 0.3 mm. focal spot which can be used for direct radiographic enlargements because of absence of penumbra effect.

Ultramicroscopic, *adj.*—So infinitely small that it cannot be seen with a microscope.

Ultraviolet, *n.*—An invisible portion of the spectrum of radiation having wave lengths just beyond the range of visible violet light.

Umbau Zones—These are osteolytic areas in the diaphysis of a bone resembling pseudofractures. (cf. also Looser's Transformation Zones.)

Umbilical, *adj.*—Of or pertaining to the umbilicus or navel.

Umbilication, *n.*—A pit or depression like a navel.

Umbilicus, *n.*—The navel.

Umbra, *n.*—The true or sharply defined shadow of an object as opposed to its penumbra.

Umbrathor, *n.*—A proprietary preparation used for opacification of the urinary tract.

Unciform, *n.*—The hamate bone of the distal row of carpal bones of the wrist; book-like in shape.

Undulant Fever—Brucellosis. A chronic remittent fever due to the Brucella abortus.

Unerupted Teeth—Teeth which still remain unerupted in the alveolar process.

Ungerleider and Gubner Nomograms[2]—These are charts designed for cardiac measurement using set standards for calculating the area of the heart shadow as seen on the PA teleroentgenogram of the chest.

Ungual Phalanx—The terminal phalanx bearing a nail.

Ungual Tufts—Fan-shaped shelf of bone at the extremity of each terminal phalanx.

Unicameral Cyst—One having a single cavity as in a unicameral bone.

Unicornate, *n.*—Spoken of a uterus having a single horn or cornu.

Unilateral, *n.*—On one side only.

Union of Epiphysis—The joining of the epiphysis with the shaft, then it ceases to function as a bone-forming structure.

Union of Fracture—Growing together of two ends of a fractured bone with callus formation.

Unipolar, *adj.*—Having one pole.

Unit, *n.*—Smallest standard measure of size or weight or other quality.

Unit Magnetic Pole—One of such strength that it exerts a force of 1 dyne upon a pole of equal strength at a distance of 1 cm. in a vacuum.

Unresolved Pneumonia—One which has not cleared completely within 4 to 6 weeks.

Ununited, *adj.*—Not united.

Upper Gastrointestinal Series (Upper GI Series—An x-ray examination of the esophagus, stomach, duodenum and remainder of the small bowel by opaque (barium) mixture.

Upside-Down Stomach, *n.*—Herniation of the stomach through the diaphragm with a considerable portion of the stomach within the thoracic cavity. This may be complicated by volvulus. (See also hiatus hernia.)

Urachus, *n.*—A portion of the allantoic sac of the fetus persisting in later life as the umbilical ligament.

Uranium, *n.*—Element 92. It is a naturally occurring element consisting principally of two radioactive isotopes, U238 and U235. It has an atomic weight of 238.07.

Uremic Pulmonary Edema (Pneumonitis)—Pulmonary edema associated with uremia.

Ureter—The tube which conveys urine from the kidney to the bladder.

Ureteral—Pertaining to the ureter, the duct that carries the urine from the kidney to the bladder. (cf. Urethral.)

Ureteral Catheterization—Introduction of small ureteral catheters through a cystoscope into the ureters.

Ureterectasis, *n.*—Dilatation of the ureter.

Ureteritis, *n.*—Inflammation of a ureter.

Ureteritis Cystica—A chronic inflammatory change with cystic formations resembling tuberculosis of the ureter. Appearance of the filling defects in the ureter are sometimes described as "cobble-stone" effect.

Ureterocele, *n.*—A large dilatation with an outpouching similar to a diverticulum which, in the AP view, presents a typical "cobra head" appearance. Usually these are found near the ureterocystic junction.

Uretero-Colostomy—Transplantation of the ureters into the transverse portion of the colon.

Ureterocystography, *n.*—Visualization of the

[1] Etter, L. E.: Magnification techniques in radiography. *Ind. Med. & Surg., 28*:1, 8–10, Jan. 1959.
[2] Ungerleider, Harry E. and Gubner, Richard: Evaluation of heart size measurements. *Am. Heart J., 24*:4, Oct. 1942.

ureters and urinary bladder on x-ray film by retrograde opacification.

Uretrography, *n.*—Roentgenographic examination of ureters after injection with opaque material.

Ureteropelvic, *adj.*—Of or pertaining to the junction between the ureter and the pelvis of the kidney.

Ureteropelvic Junction—The site of transition of the kidney pelvis into the ureter.

Ureterovaginal, *adj.*—Of or pertaining to a fistula either congenital, surgical or pathological connecting these two structures.

Urethra, *n.*—The tube which conveys urine from the bladder to the outside.

Urethral, *adj.*—Of or pertaining to the urethra. (cf. Ureteral.)

Urethrocystogram, *n.*—A roengtenogram showing the opacified urethra and urinary bladder.

Urethrocystography, *n.*—The procedure of opacifying the urethra and the urinary bladder for roentgenographic examination.

Urethrogram, *n.*—A roentgenogram showing the opacified urethra.

Urethrography, *n.*—Radiographic examination of the urethra after filling with opaque material.

Urinary, *adj.*—Of or pertaining to the urinary tract or to the urinary bladder specifically.

Urinary Bladder—Receptacle for collection of urine from the ureters or the vesica urinaria.

Urinary Tract—The kidneys, ureters, and urinary bladder.

Urogenital, *adj.*—The urinary tract and the genitalia taken together in either the male or female.

Urogram, *n.*—Roentgenographic visualization of the urinary tract after opacification by injection of opaque medium into the venous system. (Also Excretory Urogram.)

Urography, *n.*—Roentgenographic examination of the urinary tract, either by the indirect intravenous route or by the direct retrograde route through the urinary bladder.

Urography, Excretory—Visualization of the urinary tract by virtue of excretion of opaque medium which has been injected by the intravenous route. This term is preferable to that of IVP—Intravenous Pyelography.

Urokon (Urokon Sodium), *n.*—A proprietary drug used by intravenous injection for opacification of the urinary tract.

Uroselectan, *n.*—The first proprietary preparation used for opacification of the urinary tract by intravenous injection.

Urticaria, *n.*—Hives.

Useful Beam—A term used in radiology to indicate that part of the primary radiation which passes through a collimating cone or diaphragm.

Uterography, *n.*—The procedure of opacifying the uterus with opaque medium and recording this on a roentgenogram.

Uterosalpingography (Hysterosalpingography), *n.*—The process of making a roentgenographic examination of the uterus and Fallopian tubes after opacification with an opaque medium.

Uterotubography, *n.*—Same as uterosalpingography.

Uterus, *n.*—Womb.

Utricle, *n.*—A small blind pouch between the prostate and perineum which opens into the urethra in males.

Uvula, *n.*—A small tongue-like process of the soft palate projecting into the oropharynx which may be visualized on supero-submental (axial) views of the skull as a rounded area (about 1 cm.) of increased density.

V

Vacuolated, *adj.*—Pertaining to or characterized by vacuoles; any space or cavity formed in the protoplasm of a cell.

Vacuole, *n.*—A cavity or vesicle in the protoplasm of a cell containing watery fluid.

Vacuum, *n.*—Devoid of gas.

Vacuum Tube—Any tube in which the space has been reduced to a vacuum.

Vagina, *n.*—The female genital canal extending from the cervix of the uterus to the vulva.

Vaginal, *adj.*—Of or pertaining to the vagina.

Vaginal Fistula, *pl. -ae.*—Pathological opening(s) occurring between the vagina and the bladder (vesico-vaginal) and between the vagina and the rectum (recto-vaginal).

Vaginitis, *n.*—Inflammation of the vagina.

Vaginogram, *n.*—Radiographic demonstration of the structure of the vagina following injection of opaque medium.

Valence, *n.*—The number of ions with which a substance is capable of combining; the absolute valence of an atom is the number of electrons or bonds with which it attaches itself to other atoms in a molecule. A number representing the combining or displacing power of an atom.

Valence Electron—This is an electron which is gained, lost or shared in a chemical reaction.

Vallecula, *pl.-ae, n.*—The pouches in each side of the hypopharynx at junction of base of tongue with the epiglottis.

Vallecular Sign[1]—Evidence of dyskinesia in the swallowing mechanism manifested by failure of the valleculae to empty promptly after filling with liquid barium. This commonly indicates a lesion in the esophagus or at the esophagogastric junction.

Valsalva Maneuver—Forced expiration against a closed glottis to increase intrathoracic pressure. (cf. Mueller Maneuver.)

Valve, *n.*—A fold of membrane or flap-like structure in the heart to prevent reflux of blood; also, the ileo-cecal valve between the ileum and the cecum.

Valve Tube—A vacuum tube with two electrodes, one of which is usually an incandescent filament, the other an unheated plate, the purpose of which is to permit the passage of one phase of an alternating current, thus rectifying it.

Valvular, *adj.*—Pertaining to valves as of the heart.

Van De Graaf Generator—An electrostatic machine or generator in which one terminal is maintained at a high potential by delivering electric charges to it on rapidly moving belts.

Vanishing Lung—A condition of advanced cystic disease of the lung in which there are large bullae with complete disappearance of lung markings.

Varices, Esophageal—Dilated, tortuous veins in the esophagus frequently associated with hepatic cirrhosis and may be radiographically demonstrable.

Varicose Veins—Abnormal dilated tortuous veins, usually seen in the legs.

Varicosities, *n.*—Tortuous and enlarged veins such as seen in the esophagus and in the legs.

Variegated—To diversify in external appearance, especially with different colors; to dapple.

Varix, *pl.* **Varices,** *n.*—Enlarged and tortuous veins, as in the legs or esophagus.

Vascular, *adj.*—Of or pertaining to blood vessel structures.

Vascular Channels—Venous lakes in the diploe of the skull and grooves for the arteries and veins embedded in the inner table of the skull.

Vascular Markings—The tree-like markings of branching pulmonary arteries and veins throughout the lungs.

Vascular Ring—A loop of an aberrant vessel about the proximal third of the esophagus.

Vasculature, *n.*—All of the blood vessels supplying a part as the vasculature of the lungs or intestines.

Vas Deferens—A duct running from the testes to the prostatic urethra.

Vasography, *n.*—A method of demonstration of vessels, arteries, veins, or lymphatics by roentgen examination after injection of opaque material.

Vastine-Kinney Method[2]—Two charts designed to show the average normal position of the pineal gland with relation to the superior-inferior and the anterior-posterior diameters of the skull.

Vater, Ampulla of—Site of opening of the pancreatic duct of Wirsung and the common bile duct in the second portion of the duodenum.

Vein, *pl.-s, n.*—The blood vessels which carry the blood back from the extremities to the heart.

Velum, *n.*—Veil; the posterior portion of the soft palate joined to form the uvula.

Vena Cava—Hollow vein; inferior v.c., brings blood from lower extremities and abdominal and pelvic viscera to the right side of the

[1] Arendt, Julian and Wolf, Arthur: The vallecular sign. *Am. J. Roentgenol., Rad. Ther. & Nuc. Med., 57*:4, April 1947.

[2] Vastine, J. H. and Kinney, K. K.: Pineal shadow as aid in localization of brain tumors. *Am. J. Roentgenol. Rad. Ther. & Nuc. Med., 17*:320, 1927.

heart; superior v.c., brings blood from head, neck, chest and upper extremities to right atrium.

Venable Coaptation Splint—An eight-screw bone plate providing for sliding one of the fractured bone ends, with screws attached, before fastening. (See chart on p. 108.)

Venable Plate—A four-screw bone plate for fixation of fractures. (See chart on p. 108.)

Venography, *n.*—A method of demonstrating venous structures by roentgen examination after intravenous injection of opaque media.

Venography, Portal—This is a method of visualizing the liver following injection of 35 to 75 per cent solution of Diodrast directly into the portal vein. This may be done either during laparotomy or by percutaneous injection through the abdominal wall.

Venous Angioma—Blood vessel tumor made up entirely of veins.

Venous Diploe of Skull—These are venous channels within the diploe (Veins of Breschet) which are connected to the venous sinuses via emissary veins.

Venous Lake—Irregular dilatations of the veins of Breschet found in the diploe of the skull.

Venous Sinuses—Large blood vessels within the cranium lying between folds of the dura mater which carry blood from the meninges via the superior sagittal sinus, inferior sagittal sinus, transverse and sigmoid sinuses to the internal jugular vein.

Ventosa, *n.*—Air filled as in spina ventosa, occasionally seen in tuberculosis or cancer of bone where there is absorption of the bone bordering the medulla with a new deposit under the periosteum giving an appearance as if it were inflated with air.

Ventricle, *pl.-s, n.*—The reservoirs, or spaces, in the brain and two of the cardiac chambers.

Ventricles of the Brain—Cavities in the brain containing cerebrospinal fluid; the lateral, third and fourth ventricles.

Ventricles of the Heart—The right and left chambers of the lower half of the heart.

Ventricular, *adj.*—Of or pertaining to the ventricles.

Ventriculogram, *n.*—X-ray examination of the skull showing air in the ventricles, injected by means of trephine openings in the skull.

Ventriculography, *n.*—Roentgenographic examination of the skull after removing the cerebrospinal fluid through trephine holes and filling the ventricles with some medium of greater or lesser density, such as, Thorotrast or air, for diagnosis of brain tumor.

Vermiform, *adj.*—Shaped like a worm; the vermiform appendix.

Vermiform Appendix—The worm-like tube extending from the lower and medial portion of the cecum, supported by the mesoappendix, and usually lying in the right iliac fossa.

Vertebra, *pl.-ae, n.*—One of the segments of the vertebral column described in several groups as the cervical vertebrae, thoracic vertebrae, lumbar vertebrae, sacral vertebrae and coccygeal vertebrae.

Vertebra, Butterfly—The appearance of a vertebra with two biconcave deformities of the end plates as seen in the AP view. This appearance is due to persistence of a remnant of the fetal notochord.

Vertebra Plana—A very flat vertebra.

Vertebral, *adj.*—Pertaining to vertebrae or the the spinal column.

Vertebral Bodies—The centra of the vertebrae.

Vertebral Column—Composed of the seven cervical vertebrae, twelve thoracic vertebrae, five lumbar vertebrae, five sacral vertebrae fused into the single sacrum and the four coccygeal vertebrae.

Vertebral Notching—Notches, both superiorly and inferiorly, are seen in the pre-adolescent vertebral body to receive the epiphyseal ring. This is, of course, of no pathological significance.

Vertex, *n.*—The topmost point of the skull taken as an anatomical landmark.

Vertical, *adj.*—Of or pertaining to the vertex; perpendicular to the horizontal.

Vertico-Frontal Position—Caldwell-Law[1] position for sinus x-ray examination.

Vertico-Mental Position—Water's[2] position for x-ray examination of the paranasal sinuses. (The maxillary sinus position.)

Vertico-Submental Position (Axial or Hirtz[3] View)—A position for examination of the sphenoidal sinuses.

Vertigo, *n.*—Dizziness.

Verumontanum, *n.*—An elevated portion in the floor of the prostatic portion of the urethra, the prostatic ducts opening on either side of it.

Vesica-Fellea—The gallbladder.

Vesical, *adj.*—Of or pertaining to the urinary bladder.

Vesical Calcification—Urinary calculi, usually showing concentric rings of calcification, found in the urinary bladder.

Vesico-Vaginal Fistula—Pathological opening between the urinary bladder and the vagina. This may occur as a complication of malignant disease, radiation therapy or tears during childbirth.

[1] Caldwell, E. W.: Skiagraphy of accessory sinuses of nose. *Am. J. Roentgenol., 5*:569, 1918.

[2] Waters, C. A. and Waldron, C. W.: Roentgenology of accessory nasal sinuses describing modification of occipito-frontal position. *Am. J. Roentgenol., 2*:633, 1915.

[3] Hirtz, E. J.: Radiography of base of skull. *J. De Radiol. Et. D'electrol., 6*:253–263, June, 1922.

Vesicle, *n.*—Bladder; the sac or pouch for the collection of bile, or urine; a small blister of the skin.

Vessel, *n.*—Any duct or canal carrying or conveying a liquid such as blood or lymph.

Vestibule, *n.*—A small space at the entrance of a canal as the vestibule of the labyrinth in the internal ear, and the vestibule of the vagina.

Viable, *adj.*—Capable of living, as a 7 months fetus.

Victoreen.[1], *n.*—A condenser r-meter first made in 1927 by John A. Victoreen for measurement of x-ray output in r units at the suggestion of Fricke and Glasser. Also, Victoreen ionization chamber, and Glasser-Seitz condenser r-meter.

Villonodular Synovitis[2]—Extreme hyperplasia of the synovial membrane of a joint producing tumor-like formations. These may occasionally show some calcium deposits.

Viral Pneumonia—A form of atypical pneumonia caused by a virus.

Virile, *adj.*—Man-like; relating to the male sex.

Virus, *n.*—A submicroscopic infective organism causing various diseases, for example, measles and anterior poliomyelitis.

Visceral, *adj.*—In close relationship to a viscus or organ.

Visceral Pleura—The pleura covering the lungs as opposed to the parietal (wall) pleura.

Visceroptosis, *n.*—Downward displacement of a viscus.

Visiodol, *n.*—Proprietary name for a preparation used in bronchography.

Viscus, *pl.* **Viscera,** *n.*—A body organ; such as, the liver, spleen or kidney.

Viscus, Hollow—An organ such as the stomach or large and small intestine. With rupture, as from trauma or ulcer, gas escapes into the peritoneal cavity.

Vitallium, *n.*—Name for cobalt-chromium alloy of platinum-white color, used for cast dentures and surgical appliances.

Vitamin C Deficiency (Hypovitaminosis C)—In this disorder, the clinical entity of scurvy or Barlow's Disease is seen and characterized principally by bleeding of the gums, subperiosteal hemorrhages and calcifications within these which may be demonstrated roentgenographically.

Vitamin D Deficiency (Hypovitaminosis D)—A nutritional disorder leading to osteomalacia in adults and in infants, causing rickets.

Vitelline Duct—Relating to the yolk sac of the embryo.

Volar, *adj.*—Referring to the palm or sole; ventral side of wrist or forearm.

Volt, *n.*—The fundamental unit of measurement of difference in potential or pressure between two points in an electric circuit, usually connected across the circuit. Named for the Italian physicist, Allessandro Volta, who made the "voltaic pile" or first battery in 1880.

Voltage, *n.*—The potential or electromotive force of a charge as measured in volts.

Voltage Compensation—A circuit designed to control variations in line voltage so that a constant potential may be supplied to the autotransformer.

Voltmeter, *n.*—An electrical measuring device for registering electromotive force and calibrated in units designated volts.

Volume Dose—This is the same as the integral dose, which is a measure of the total energy absorbed by a patient or an object during exposure to radiation. This may be expressed in gram-roentgens, according to British usage.

Volvulus, *n.*—Obstruction from twisting of a loop of bowel.

Volvulus of the Stomach—Torsion or twisting of the stomach with production of partial obstruction.

Vomer—A bone which forms the lower and posterior portion of the septum of the nose.

Vomit, *v.*—The spontaneous and forceful emptying of the stomach contents by regurgitation through the esophagus and mouth.

Vomiting, *n.*—This phenomenon is frequently described as a symptom in gastrointestinal disorders, and is frequently associated with some type of gastrointestinal obstruction whether functional or organic.

Vomitus, *n.*—Contents of the stomach or intestine forcefully regurgitated or vomited.

Von Gierke's Disease—Glycogenic accumulation in the liver, heart, kidneys, spleen, and other organs accompanied by hypoglycemia and ketosis in the fasting state with increased sensitivity to insulin, and an unusually small rise in blood sugar in response to adrenalin.

Von Hippel-Lindau's Disease[3,4]—Cystic changes in the cerebellum associated with hemangioma of retina, polycystic kidneys and pancreas.

Von Recklinghausen's Disease—Osteitis fibrosa cystica. Also neurofibromatosis, characterized by multiple small neurofibromas of the skin which may also involve bone producing rounded areas of absorption.

Vulva, *n.*—The external genitalia of the female; the pudendum muliebre.

[1] Glasser, Otto, Editor: *Medical Physics*, Chicago, The Year Book Publishers, pp. 1330 and 1370, 1944.
[2] Lewis, Raymond W.: *The Joints of the Extremities*. Springfield, Illinois, Charles C Thomas, pp. 81–83, 1955.

[3] Von Hippel, Eugen: Ueber eine nahezu isolierte Degeneration des Ganglion Retinae, Albrecht Von Graefes, *Arch. für Ophthal.*, *79*:545–551, 1911.
[4] Lindau, Arvid: Studien uber kleinhirncysten. *Acta Path. et Microbiol.*, Scan., Suppl. No. 1, 1926.

W

W—Symbol for Wolfram, the elemental substance of tungsten.

Waldenstrom's Disease—Porphyria.

Waldeyer's Sheath—The germinal epithelium.

Wash, *n.*—Part of the processing of x-ray or photographic film where it is immersed in running water before being placed in the fixing or clearing solution.

Wasserman Test—A complement fixation test for syphilis.

Water-Cooled Tube—An x-ray tube in which the target is cooled by the flow of water.

Water-lily Sign—Collapsed endocyst of echinococcus granulosus floating on fluid in a cyst, producing a profile suggesting a lily pad.

Water of Crystallization—Water taken on by a substance when it crystallizes.

Water's Position[1]—The vertico-mental position for x-ray examination of the maxillary sinuses. Thirty-seven degrees angulation of the canthomeatal line from the horizontal.

Watt, *n.*—Energy per second of electricity, the product of voltage and amperage. Named for James Watt, Scottish engineer.

Wave Length—The distance between the peaks of waves in any wave form; such as, light, x rays, and other electromagnetic forms. For electromagnetic radiation, the wave length is equal to the velocity of light (c) divided by the frequency of the wave (v), c/v.

Wave Motion—Transmission through space or a medium of periodic motion or vibration of two types: Transverse, in which the vibration is perpendicular to direction of propagation, and longitudinal in which the vibration is parallel to the direction of propagation.

Web Formation—A shelf or web of membrane sometimes found in association with iron-deficiency anemia as a part of the Plummer-Vinson syndrome.

Web Tibial Bolt—A specially designed orthopedic appliance for applying traction to the tibia. (See chart p. 109).

Wedge-Shaped Vertebra—One having a short anterior vertical height as compared with its posterior measurement and usually representing a compression fracture.

Wedging, Ischemic Necrosis—Osteochondritis of a vertebra with associated ischemic necrosis and compression described as Calve's Vertebra Plana, in which the primary ossification centers of the vertebral body are involved.

Wedging, Traumatic—Compression fracture of a vertebra with marked shortening of the anterior vertical height.

[1] Waters, C. A. and Waldron, C. W.: Roentgenology of accessory nasal sinuses describing modification of occipito-frontal position. *Am. J. Roentgenol.*, *2*:633, 1915.

Weight-Bearing Line—The imaginary line along which the weight is borne.

Whipple's Disease[2]—A rare disease characterized by steatorrhea. The disease is progressively fatal. It is also described as intestinal lipodystrophy and lipophagia granulomatosis.

White Kidney—The large white kidney is one affected with chronic interstitial nephritis; the small white kidney is one which is atrophic and degenerated following chronic interstitial nephritis.

Whole Body Irradiation—Uniform exposure of the whole body to ionizing radiation (contrasted to local irradiation, as in x-ray therapy).

Wilm's Tumor (Wilm's Embryoma)—An embryonal carcinoma of the kidney; a malignant tumor.

Wilson's Spinal Fusion Plate—A metallic plate for fastening the spinous processes in spinal fusion operations. (See chart on p. 109.)

Wimberger's Line[3]—This is a zone of increased calcification seen ringing the epiphysis of a long bone in hypovitaminosis D, or rickets.

Winding, *n.*—A coil of wire around a central core of a transformer forming the primary or secondary winding.

Wing, *n.*—An anatomical part such as the greater wing of the sphenoid bone or the ala of the nose.

Wire, *n.*—A thin cylinder of copper or nickel wire, whose size is graduated by gauges, used to conduct electricity from its source in the generator to machine where it will be used. The gauge or diameter of the wire will be determined by the distance and amount of electricity to be carried.

Wirsung, Duct of—Larger and lower of two pancreatic ducts, emptying, with the common bile duct, into the duodenum at the ampulla of Vater.

Womb, *n.*—The uterus.

Work, *n.*—A term in physics meaning the product of force times distance. When a force of 1 dyne acts through a distance of 1 centimeter, the amount of work done is said to be an erg.

Wormian Bones—Sutural bones of irregular size and shape found principally in the lambdoidal and coronal sutures.

Wound, *n.*—An operative or accidental incision or opening.

Wrist, *n.*—The part of the upper extremity between the hand and the forearm; the carpus as distinguished from the metacarpus and containing the carpal bones.

[2] Whipple, G. H.: Hitherto undescribed disease characterized anatomically by deposits of fat and fatty acids in intestinal and mesenteric lymphatic tissues. *Bull. John Hopkins Hosp.*, *18*:382-391, 1907.

[3] Wimberger, H.: Roentgenometrische Wachtumsstudien am Gesunden und Rachitische Saeugling. *Ztschr. S. Kinderheilk.*, *35*:182, 1923.

X

Xanthoma, *n.*—Yellowish nodules or plaques occurring in a skin disease of this name.

Xanthoma, Petrous—An uncommon primary tumor involving the petrous portion of the temporal bone producing a sharply delimited destructive lesion with no appreciable reactive change around it.

Xanthomatosis, *n.*—A disturbance of metabolism characterized by the occurrence of lipoid masses in the reticuloendothelial system and causing definite roentgenological lesions in the skull and long bones. (See Hand-Schuller-Christian syndrome, Gaucher's disease, Niemann-Pick disease.)

Xerograph—A radiograph produced by the xeroradiographic method. This is not a transparency but resembles a black and white conventional print.

Xeroradiography—A method of producing nontransparent prints of densities produced by x rays on a specially prepared selenium plate that has been exposed to x rays. This method may find application especially in a disaster area where usual facilities will be lacking.

Xiphoid (Ensiform) Process—The small triangular cartilaginous process forming the lower end of the sternum; shaped like a sword (ensiform).

Xograph, *n.*—A skiagram, or shadow picture.

X Ray, *pl. s., n.*—(Roentgen Rays)[1]—Electromagnetic radiations discovered by W. C. Röntgen at Würzburg, November 8, 1895, are generated at the point of impact of a stream of high-speed cathode rays or electrons on the focal spot or target of the anode of an x-ray tube. These invisible rays carry no charge, are not refracted as are light rays, and have the ability to penetrate opaque materials and affect photographic film emulsion, recording shadows of varying densities depending upon absorption by the specific components of the substances.

When used as a *noun* a hyphen should not be used.[2]

X-Ray, *adj.*—Hyphenated when used in this manner as an adjective to describe an x-ray examination.

X-Ray, *v.*—Hyphenated when used as a verb in this manner, as, "I will x-ray you."

X-Ray Beam—Primary beam of x rays composed of heterogenous qualities.

X Rays, Production of—1. Electrons must be set free from the parent positively charged nuclei of atoms as by the heated filament in the cathode of an x-ray tube, 2. They must be set into rapid motion, by imposition of marked difference in potential (kvp) and current (ma), 3. They must be stopped suddenly, as on the tungsten target or anode of the x-ray tube to produce x rays.

X-Ray Spectrograph—An instrument for the photographic recording of an x-ray spectrum.

X-Ray Spectrum—The spectrum of x rays produced by causing a beam of x rays coming from an x-ray tube to strike a diffraction grating provided by the cleavage plane of certain crystals.

X-Ray Technician—A person who has been specially trained and is skilled in the practice and science of roentgenography. When certified by American Registry of X-ray Technicians and Registered, designated R. T.

X-Ray Transformer—The generator or inductive device consisting of a step-up transformer where voltage is supplied to the primary and kilovoltage is induced in the secondary usually in a ratio of 1:1,000 or more.

X-Ray Tube—A vacuum tube used for the production of x rays. It may be a gas tube relying on gas in the tube for its source of electrons, or a hot cathode tube which develops its electrons from a heated filament. (Coolidge type).

[1] Röntgen, Wilhelm Conrad: On a new kind of rays. *Sitzgsber. Physik.—Med. Ges.*, Würzburg, 1895. CXXXVII. *Ann. Physik U. Chem.*, N.D. *64*:1 (1898).

[2] *Webster's New International Dictionary of the English Language*, Second Edition, Unabridged, Springfield, Mass., G. and C. Merriam Co., 1956.

Y

Yaws, *n.*—A tropical disease of infectious nature causing fever, rheumatic pain and an eruption of tubercles capped with caseous crusts.

Y-Shaped Fracture—One occurring usually at the end of a long bone such as the femur or tibia and usually extending into the joint surface.

Yttrium^{90}, *n.*—YT^{90} or Y^{90} an isotope of yttrium. Radioactive yttrium (Radioyttrium) (Yt^{91} or Y^{91}) may be used by interstitial injection for carcinoma of the prostate.[1] Colloidal suspensions have been used for treatment of some blood diseases.[2]

Goldie, Horace and West, H. D.: Effect of peritumoral tissue infiltration with radioactive yttrium on growth and spread of malignant cells. *Cancer Res.*, *16*:484–489, July 1956.

[2] Fields, Theodore and Seed, Lindon: *Clinical Use of Radioisotopes*, Chicago, Year Book Publishers, Inc., 1957.

Z

Zenker's Degeneration—Hyaline degeneration with necrosis of striated muscle.

Zenker's Pulsion Diverticulum—Diverticulum usually occurring in the lower third of the esophagus and often directed downward and to the right.

Zone of Provisional Calcification—In the formation of bone, chondroblasts derived from the epiphyseal side of the epiphysis are arranged in columns and migrate to the metaphyseal zone where, after becoming more mature and vacuolated, a layer of calcium is laid down. Later osteoblasts and osteoclasts invade this calcified zone and new bone is formed by the deposition of osteoid by the osteoblasts.

Zygapophyseal, *n.*—Pertaining to zygapophysis, the articular process of a vertebra. (Also apophyseal.)

Zygoma, *n.*—The bony arch which provides the prominence of the cheek bone.

Zygomatic, *adj.*—Of or relating to the zygoma.

Zygomatic Arch—The arch formed by the zygomatic process of the temporal bone and the temporal process of the zygomatic bone.

Zygomatic Bone—The malar or cheek bone.

Zygote, *n.*—A fertilized egg or a cell formed by the union of the male and female gametes.